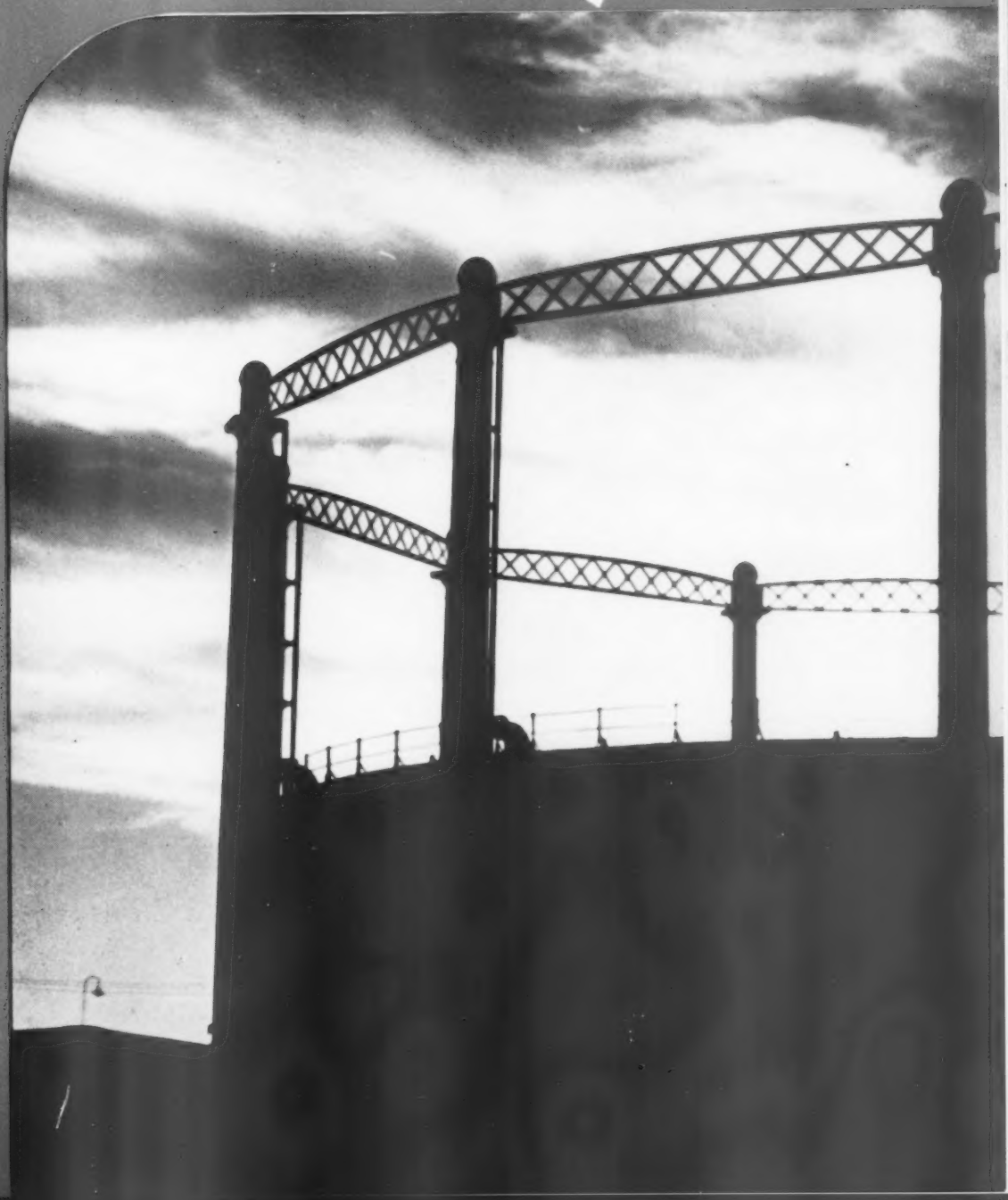
MERICAN GAS ASSOCIATION

Monthly



Y 1949

HERE'S BIG HELP

for the most important man in the world today...

YOU THE SALESMAN

GET THIS BIG FREE BOOK PACKED FULL OF SALES MAKING IDEAS THAT MEAN MORE MONEY TO YOU!

No one makes a profit until a retail salesman closes a sale—moves goods and creates jobs. Today, as always, everyone's prosperity depends on you—the sales maker—the man who keeps factory wheels turning. For your own prosperity get this big book that shows how to cash in on the gas industry's $8,000,000 gas range sales program. It will make money for you. Write for it now!

IT'S FREE! MAIL COUPON TODAY!

SELL THE TOP PROFIT LINES!

Automatic Gas Ranges

BUILT TO CP TRADE MARK STANDARDS

CP — Gas Appliance Manufacturers Association

CALORIC		SGE-ACORN
CROWN		SGE-ORIOLE
ESTATE HEATROLA		SPARK
GAFFERS & SATTLER		TAPPAN
GLENWOOD		UNIVERSAL
GRAND	OCCIDENTAL	WEDGEWOOD
HARDWICK	ODIN BEAUTYRANGE	WESTERN HOLLY
MAGIC CHEF	O'KEEFE & MERRITT	In Canada:
MAYTAG DUTCH OVEN	QUALITY	CLARE BROTHERS
MOORE'S	ROPER	MOFFAT

Now Available for All Types of Gas—
In Cities, Towns and On the Farm

Gas Appliance Manufacturers Association
60 East 42nd Street, New York 17, N. Y.

☐ I am a salesman, I want that book.
☐ I am a dealer, I want____books for my salesmen.

NAME _____

STREET _____

CITY _____ STATE _____

This advertisement of the "CP" Manufacturers group, Gas Appliance Manufacturers Association, ties in closely with A. G. A. spring range campaign

Picture on this month's cover shows a new dawn peering through the framework of a gas holder. Photo by Thomas Lee Robey

---

FIVE down-to-earth business conferences made April 1949 the busiest month of the year for the gas industry. Delegates from every section of the country flocked in record numbers to meetings on domestic gas research, accounting, industrial and commercial, residential gas, and technical activities. Intense hunger for information was shown at dozens of informal luncheon sessions. These and other meetings are reported in detail in this issue. . . . Top billing is also accorded to six major conference articles, two of which should be required reading for every gas man. . . . D. A. Hulcy concludes from years of experience and observation that gas company employees must become more civic-conscious. . . . C. B. Boulet diagnoses management's first duty to its workers. The solution of employee wants, he shows, is in perfect harmony with the American business system. Seldom has a more penetrating and more inspiring paper been published on this subject. . . . April's fever of activity promises to run still higher in May, and once again the most newsworthy details and papers will be documented in the Monthly.

JAMES M. BEALL
MANAGER, PUBLICATIONS

JAC A. CUSHMAN
EDITOR

EDITORIAL OFFICES:
AMERICAN GAS ASSOCIATION
420 LEXINGTON AVE., NEW YORK 17, N.Y.

CONTENTS FOR MAY 1949

FEATURES

THE EYES OF MAIN STREET ARE UPON YOU—by D. A. Hulcy . . . 2
GAS INDUSTRY EXPECTS TO EXCEED FRE-WAR SALES 4
TRENDS IN THE ECONOMY—by Sumner H. Slichter 5
PROGRESS IN DEMAND METERING—by G. E. Griffin 7
DOMESTIC RESEARCH GAINS CITED 10
MANAGEMENT'S JOB IN AN "AGE OF SECURITY"—by C. B. Boulet . 12
COMMITTEE CLOSE-UP 15
LONG-TERM PLANNING FOR MAINS—by George A. S. Cooper . . 16
INDUSTRY GETS CREDIT PICTURE 19

SECTIONS

CONFERENCE INDICATES BROADER ROLE FOR ACCOUNTANTS . . 20
NASHVILLE MEETINGS CROWDED (INDUSTRIAL AND COMMERCIAL) 24
MID-WEST PROGRAM PRODUCTIVE (RESIDENTIAL) 26
RECORD INTEREST AT CINCINNATI (TECHNICAL) 28
APPLIANCE STANDARDS SIMPLIFIED (LABORATORIES) 33

DEPARTMENTS

INDUSTRIAL RELATIONS ROUND-TABLE 14
INDUSTRY NEWS 34
OBITUARY 41
PERSONAL AND OTHERWISE 44
ASSOCIATED ORGANIZATION ACTIVITIES 52
CONVENTION CALENDAR 55
PERSONNEL SERVICE 56

THE MONTHLY IS INDEXED BY THE INDUSTRIAL ARTS INDEX

VOL. 31 NO. 5

• Subscription $3.00 a year - Published eleven times a year by the American Gas Association, Inc. Publication Office, American Building, Brattleboro, Vt. Publication is monthly except July and August which is a bi-monthly issue. Address all communications to American Building, Brattleboro, Vermont, or to 420 Lexington Ave., New York 17, N. Y. All manuscript copy for publication should be sent to the editorial offices in New York. The Association does not hold itself responsible for statements and opinions contained in papers and discussions appearing herein. Entered as Second Class Matter at the Post Office at Brattleboro, Vermont, Feb. 10th, 1922, under the Act of March 3, 1879. Cable addresses: American Gas Association, "Amerigas, New York"; American Gas Association Testing Laboratories, "Amerigaslab, Cleveland."

Ewing Gallow

The eyes of Main Street are upon you

By D. A. HULCY

Vice-President, American Gas Association

If there was ever a business which started on Main Street, t is ours. In fact, we started on the curbs of Main Street, and for one hundred years gas was used and sold exclusively a an illuminant for street and house lighting. The passing years have put us on Main Street, inside, under, and on top of the homes, plants and buildings of America. The story of how this all came about and "what makes our industry great," ca be of inestimable value today in planning for the future.

Many qualified men in the gas business are of the opinion

* Presented before A. G. A. Industrial and Commercial Gas Section Nashville, Tenn., April 6, 1949.

that our mettle as operators will be tested in the next five years. They feel that from the standpoint of competition and the many problems which can arise from unsettled social conditions of the country, we are going to be called upon to show what we can do. These problems are important to us as employees of our respective companies and as individuals.

For industries, as well as individuals, life is a series of adjustments to changing conditions. Men and businesses succeed or fail in proportion to their ability to make these adjustments quickly. The incident of the invention of the electric lamp seemed insignificant at first because at that time the new and improved Welsbach gas mantle was being developed. This revolutionary product seemed then to be the answer to the gas man's dream. But even in those early days the electric companies coined the slogan "If it's not electric it's not modern." This idea of a more brilliant light at the flick of a switch captured the imagination of the public.

To meet this challenge, the worried gas companies planned well-designed publicity and advertising campaigns. Giant advertisements extolled the hygienic value of gas lamps, praising the absence of flicker and eye strain. This campaign was even supported by testimonials from members of the medical profession. In spite of all these efforts and hard work, nothing was accomplished. There was no way to stem the tide in combating this new source of light.

However, the loss of the lighting business had its compensations. It opened the eyes of gas men to the possibility of adapting the Bunsen blue flame for appliance for other purposes than lighting. In fact, this apparent calamity which could only forecast doom and disaster, became the birthday and the founding of an industry upon which there now literally rests the safety and comfort of this nation.

This eminent position which we have attained correspondingly increases our responsibilities. The stability which now characterizes our industry must be protected with vigilance and know-how. We must continually take stock of the past and plan carefully for the future. We must not let up in our work to make even greater progress than we have made.

The amazing growth of the gas industry can be viewed best by looking back only 15 years. The span of 15 years, from 1934 through 1948, shows what can be done in a short period of time:

	1934	*1948*
Number of employees	125,900	163,600
Number of customers	15,511,000	22,689,000
Number miles of pipe	263,600	341,500
Gas Sales	$702,616,000	$1,559,324,000

These impressive figures are concrete evidence of energy, brains and money at work. From a fledgling, our industry has become one of the largest in the land. Similar figures on my own company, Lone Star, which will be fairly representative, reflect further examples of this phenomenal growth.

	1934	*1948*
Number of employees	3,209	5,200
Number of customers	247,429	459,539
Number miles of pipe	7,778	11,425
Gas Sales	$13,343,669	$33,244,686

We are proud of these results for the 15-year period. In Lone Star we are equally as proud of last year's record when we added 38,259 new customers. It is our intention to do equally as good or better in 1949, and I know that many in the industry, from your own experiences, share this optimism.

With such a favorable report on the development of the industry, the question naturally arises, what does make our industry great?

In my considered opinion, the answer lies in the fact that we in the gas business have been conscious of the knowledge that "The Eyes of Main Street are Upon Us." This knowledge has helped us put our best foot forward. We have been willing for the investors, our customers, our employees, the competitors, and, yes—even the government, to know exactly what we are endeavoring to do. We have been telling all of them that "Gas Has Got It" for industry and for the home. We have let those people using coal know that gas company employees do not stop the service—we have let the investing public know that we have fine properties, and know how to manage them. We have demonstrated that we can meet the emergency demands of war, as well as the enormous extensions required in a post-war era of pipe shortages. In fact, we have proved that the gas business is a service industry.

This happy position should make us all grateful in the knowledge that there is a real opportunity for greater growth and usefulness. We have earned the right to be proud of our industry and its accomplishments. But, we must not become complacent. We cannot become complacent! We must keep in mind always that the gas light men had a right once upon a time to feel the results of favorable conditions as we do now. Our very position makes it imperative that we exercise an even greater effort to let the people on Main Street know that our companies are here to stay.

How can this be done? My answer is—by showing our customers, our employees, and the citizenship of our communities that we have a modern, up-to-date product and service for sale, and that we can sell it!

It is interesting to note throughout the history of the gas business the methods used by our forebears to increase the

Mr. Hulcy is president, Lone Star Gas Co., Dallas, Texas, and is well known to industry as the holder of numerous community and national positions

sale of gas and to gain new customers. The search for new business has gone from showmanship to service. Rembrandt Peale built a museum in Baltimore to house a huge mastodon he had unearthed, which was 31 feet in length, weighed over 1,000 pounds and was supposed to be over 10,000 years old. To add to this and other attractions which he had on display in the museum, Mr. Peale bought a gas-making machine to illuminate the building. After a series of catchy newspaper advertisements and some clever publicity, he opened the museum to the public on April 23, 1816. It is reported that great crowds gathered to see the brilliant lights, and the event was similar to a present-day movie premiere. Thereafter, the gas light industry was on the march, and Baltimore soon became a well-lighted city.

Probably a greater foundation was laid when Goodman & Company of Philadelphia in 1879 first offered their "Sun Dial" range for sale. This new gas stove embodied many of the features of the present-day range. Further substantial progress was made in 1884 when the gas companies of New York defrayed, for the dealer, the expense of range installations up to the sum of $5.00 "to insure satisfactory service to the customer." This was apparently the first real dealer promotion.

Both showmanship and service were required then, and probably now, but I believe that our greatest opportunity rests on service to our customers, both domestic and industrial. In order to accomplish this, the desire to give efficient service must be instilled in the hearts and in the minds of every man and woman connected with the gas business. The idea of service to the customers, whether it is in the home or in the industry, must be the rock upon which we stand. It always has, and always will, pay dividends. Access to the homes and business houses and plants of the nation are given to us without question. The gas service man is always welcome. He is there to insure warmth, efficient cooking, a supply of hot water, refrigeration, and before long, all-year air conditioning on a large scale. His efficient presence will not only increase our business, but his attitude and his actions can dispel the smouldering antagonisms which we too often find against business in general.

Yes, "The Eyes of Main Street are Upon Us." This is especially true concerning our relationships with employees. The public gets just a fleeting view of many of us in the business. They see our barricades on Main Street, they see our ditches and machinery; but as a service industry their glances into our business are generally of short duration. Our people will meet the housewife, the maintenance men in the plants, do their work, and leave. Our reputation sometimes rests on a very short visit. As our employees who directly contact the public in their work hold such a vital place in the success of our business, it will be well for us to notice briefly what we are doing, and what we can do, to increase the efficiency of these important people.

The record of the industry in the field of employee relations will stand careful scrutiny. From the earliest days, employee training in various phases of the gas business has been carried by some of our outstanding leaders. Educational work has been predicated upon the proposition that a man can make good in the gas industry if he is willing to put forth the extra effort required to increase his value to the company. The American Gas Association, with the cooperation of colleges, state *(Continued on page 40)*

Gas industry expects to exceed pre-war sales

THE GAS INDUSTRY, under the impetus of coordinated advertising and promotional programs similar to the intensive campaigns that lifted sales of gas and gas appliances to new record levels in 1948, expects in 1949 to exceed substantially its best pre-war sales records, according to H. Carl Wolf, managing director, American Gas Association.

Gas utility companies are most optimistic in their 1949 business forecasts, Mr. Wolf declared. The Association has just completed a survey of representative gas utilities comprising large, medium and small companies in the natural, manufactured and mixed branches from each geographic region in the country.

A number of the companies surveyed expect to equal or surpass last year's sales in 1949. Most of the remaining companies estimated that sales of all appliances would be only five percent to ten percent under 1948—an all-time peak year. Pent-up demands, improved post-war appliances, and coordinated promotional effort throughout the gas industry achieved last year's records.

The survey showed that the gas industry recognizes the advent of a balanced market where supply and demand are in equality. As a consequence, most gas companies have augmented or are planning to augment their sales forces to pre-war strength. A return to aggressive sales training programs is indicated together with confidence that intensive selling methods will maintain the industry's dominant position in the home and industrial fields.

An example of scientific programming is provided in the reply of the vice-president of a large New England gas company:

"Our annual sales department report for 1948 gives encouragement to the belief that we can effectively meet increased competition through increased sales and better planning. We have ample evidence that our sales program has been effective, particularly in the case of new construction and in the sale of CP and automatic clock-controlled ranges and refrigerators.

"We need to re-establish an outside sales force. At present we have only 31 residential salesmen as contrasted to 52 prior to the war. We plan to promptly correct this situation.

"We have greatly accelerated our home service program and have already increased our personnel from about six or eight before the war to 15 at the present time. This has permitted an increase in group demonstrations and home calls on both our own appliance sales and those of dealers. We have arranged to gather much valuable information through our home calls on both gas and competitive equipment.

"An over-all advertising and promotional program has been planned for the entire year and this program so arranged as to tie in with the American Gas Association national advertising and the use of American Gas Association and appliance manufacturers' promotional materials to the fullest practical extent.

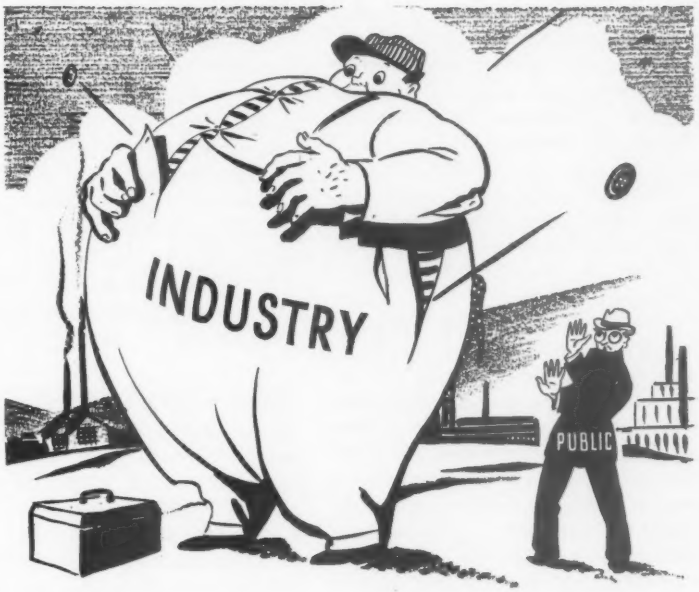
"While we cannot expect to match the local electrical advertising and promotional program, we do believe that our own program has been so set up as to make it effective, and judging from past performance I believe that our salesmanship will be more effective than that of our competition."

The president of a large Midwestern gas utility replied that his company plans to continue to maintain sales and service training schools "at top strength, using the A. G. A. sales selection and training and employee indoctrination courses and other A. G. A. material. This is good insurance," the executive stated, "against the time of additional supplies of gas when we can again expand our business."

More advertising and promotion dollars

(Continued on page 41)

Few people know industry's capacity for growth



Trends in the economy

BY SUMNER H. SLICHTER

Harvard University, Cambridge, Mass.

In January 1949 personal incomes after taxes were running at annual rate of $12 billion above January 1948—an increase of over five percent. The index of the prices of consumer goods was up only 1.2 percent. Consequently, incomes after taxes had four percent more purchasing power in January 1949 than in January 1948. Despite the rise in money incomes, the total volume of retail sales in January 1949 was slightly less than in January 1948—$9.5 billion as compared with $9.7 billion a year ago. In February 1949, incomes after taxes were still substantially above February 1948, but retail sales in February 1949 were no greater than in February 1948.

These facts about incomes and retail sales epitomize the present business situation. Incomes and purchasing power are at new post-war highs, but willingness to spend is dropping. The drop in retail sales in January 1949 below January 1948 is especially noteworthy because this is the first time in the last three years that retail sales in any month have been less than in the corresponding month of the previous year.

The drop in willingness to spend extends to business enterprises as well as to individuals. The declining willingness of business concerns to spend is indicated by the fact that they are less and less willing to seek outside money in order to spend beyond their incomes.

Particularly significant is the drop in new contract awards and new housing starts. Expenditures on plant and equipment are still running above the corresponding period of last year, but new commitments to make such expenditures are considerably less than last year. The joint survey of the Department of Commerce and the Securities and Exchange Commission indicates that corporations expect to spend about 14 percent less on plant and equipment during the second half of 1949 than during the second half of 1948.

The drop in willingness to spend means that for the first time since the period of conversion from war-time to peace-time production over three years ago, business is confronted with the problem of preventing a rise in unemployment. In order to prevent a rise in unemployment in 1949, business will need to produce and sell about $265 billion in goods at present prices, or about $10 billion more than it produced and sold in 1948.

There are two principal reasons why production and sales must increase by about $10 billion in order to prevent a rise in unemployment. The first is that the labor force may be expected to increase by about 600,000—the normal amount. This increase would raise the total gross production about one percent or $2.6 billion at present prices.

The second reason is that there will be some increase in efficiency in 1949 over 1948. The normal increase has been about two percent a year. I believe that a more-than-normal rise in efficiency is to be expected.

During the last several years efficiency has been held down by material shortages, by the fact that a large number of workers were holding jobs at which they had no experience or at least no recent experience, and by the fact that many concerns were compelled to use inexperienced supervisors. Furthermore, during the last two and a half years, industry has spent large amounts upon plant and equipment, which are bound to make possible increases in efficiency. Certainly a gain in efficiency of about three percent over 1948 is a reasonable estimate. That would mean an increase in gross national product at present prices of about $7.7 billion a year. Hence the total rise in output needed to prevent an increase in unemployment is about $10.3 billion a year.

How might an increase of approxi-

Abridgement of paper presented at National Conference of Electric and Gas Utility Accountants in Detroit, Mich., April 11-13, 1949.

mately $10 billion in sales at present prices be accomplished? The present outlook is that there will be no net purchase of American goods and services by foreign countries beyond the goods supplied by the government of the United States through the Marshall Plan. In 1948, for example, net foreign investment by the United States was only $1.5 billion, and during the latter half of the year there was no net foreign investment by the United States.

Consumption of goods by business is also likely to be less in 1949 than in 1948. Certainly the accumulation of inventories may be expected to cease. The increase in inventories absorbed $3.8 billion of the output of industry in 1948. Furthermore, a small drop of nearly ten percent, or approximately $3 billion, in expenditures on plant, equipment, and housing seems likely.

If net foreign investment disappears and gross private investment drops by $6.8 billion, an increase of approximately $18.6 billion in sales of goods to government and consumers will be necessary to prevent a rise in unemployment. Purchases of goods by local, state, and national governments are rising. The federal government alone is likely to take $6 billion or $7 billion more of goods in 1949 than in 1948, and local and state governments are likely to take about $1 billion or $2 billion more. This means that consumers will have to buy about $9.6 billion to $11.6 billion more of goods in 1949 (at present prices) than in 1948.

In other words, individuals who had personal incomes last year of about $213.6 billion, paid $21 billion in taxes, and spent about $177.7 billion on consumer goods, will need in 1949 to spend $187 billion to $189 billion on consumer goods at present prices in order to prevent a rise in unemployment.

Higher purchasing power

Can business persuade consumers to increase their takings of goods by $9.6 billion to $11.6 billion at present prices? There are a number of important favoring circumstances.

(1) Personal incomes after taxes have a higher purchasing power than a year ago. As I have pointed out, these incomes had about four percent greater purchasing power in January 1949 than in January 1948.

(2) The rate of personal spending is still low in relation to personal holdings of cash and demand deposits. In 1939, annual expenditures on consumer goods ran about six times personal holdings of cash and demand deposits; in 1948, they were only 3.3 times holdings of cash and demand deposits.

(3) Consumer short-term indebtedness, although considerably larger than several years ago, is still low in relation to personal incomes after taxes. In December 1948, total consumer credit was 8.0 percent of the annual rate of personal income after taxes in comparison with 12.0 percent in 1940.

(4) The backlog of consumer demand for some products is still large. Automobiles are an example, though considerable progress has been made in increasing the number in the country.

The backlog of housing demand is also still high. Unfortunately, the figures on the increase in dwelling units in recent years leave much to be desired. There is no doubt, however, that a large number of American families are living in houses which are quite unsatisfactory to them. It is also clear that the incomes of a large number of families are sufficiently high so that the families would be willing to buy new and better housing at prices only slightly below present levels. Finally, since the number of families will increase by about 800,000 to 900,000 during 1949, considerable construction of houses will be necessary to prevent the housing shortage from becoming acute.

How can business persuade consumers to increase their takings of goods by $9.6 billion to $11.6 billion? It is obvious that this is a problem of marketing—a problem of bringing out new and more attractive goods and quoting prices which consumers find more acceptable.

A good way of measuring the willingness of individuals to spend money is to compare the increase in their outlay on consumer goods with the increase in their incomes after taxes. Between the fourth quarter of 1946 and the fourth quarter of 1947, the annual rate of personal incomes after taxes rose by $13.3 billion, but the annual rate of expenditures for consumer goods increased by $14.1 billion. This meant that there was a rise of $1.06 in expenditures on consumer goods for every dollar rise in incomes after taxes.

Between the fourth quarter of 1947 and the fourth quarter of 1948, however, an increase in the annual rate of income after taxes of $18.5 billion produced a rise of only $9.9 billion in the annual rate of expenditures for consumer goods—an increase of 54 cents in expenditures for consumer goods for every dollar rise in income after taxes. This drop in the willingness to spend money is reflected also in the fact that the increase in total consumer credit in the four months, October 1948 to January 1949, was substantially less than half the increase in the corresponding period of a year ago.

Rate of spending

It is plain that price policies which were appropriate when the rate of consumer spending was rising faster than consumer incomes is not appropriate when consumer spending is rising far less rapidly than consumer incomes. The problem is obviously to persuade consumers to raise their rate of spending. Business has two ways of doing this—bringing out new and better goods and making reductions in its prices.

Although further price increases in some industries are necessary, the immediate business situation calls as a general rule for improvements in quality and cuts in prices. Improvements in efficiency are being facilitated by the better flow of raw ma- *(Continued on page 51)*

Salesmanship

● Pages and pages have been written upon salesmanship. Briefly summarized, they all show the necessity for a salesman to analyze his work, and then to prove that he can increase his efficiency by strengthening himself along the lines listed below:

1. Work and system
2. Tact and courtesy
3. A thorough knowledge of his goods
4. An understanding of human nature
5. Confidence in himself, in his company, in his goods
6. Loyalty and cooperation
7. Enthusiasm
8. Resourcefulness
9. Courage
10. Determination to succeed

Points a good salesman does not overlook

11. Neatness
12. Cleanliness
13. Cheerfulness
14. Consideration for the other man's point of view
15. Health and good habits.

—Printers' Ink

Time and expense can be saved by studying what has been accomplished to date

Progress in demand metering

BY G. E. GRIFFIN

Superintendent, Meter Repair Section
The Brooklyn Union Gas Co.,
Brooklyn, N. Y.

Most distribution men are familiar with a paper on demand metering written by Messrs. Pickford and Hoag of Northern Indiana Public Service Company and presented at the 1948 Distribution Conference. Whereas at first glance this appeared to be a simple report, further scrutiny revealed it to be a rather profound work as the bibliography relates almost the entire history of gas demand metering to date.

Conclusions derived by these two gentlemen indicated that the most suitable devices available for demand metering at the present time are those marketed by the meter manufacturers, such as the American Meter Company, adaptation of the GG9 Recorder. This we believe to be true because these instruments have been in existence for some time and we have some idea what to expect from them. However, there has been dissatisfaction expressed from many quarters about the adequacy or limitations of this equipment. It therefore becomes necessary to see what can be done to correct these deficiencies or to seek out or develop other devices that will do the job.

As the first step in solving this problem, it is advisable to find out from the people who must use these instruments what the demand meter is expected to do. This in itself can become quite complex as one man will want it for rate-making purposes, another for getting diversity factors for distribution design, and still another for billing the customer. As a result of our queries it would appear that a demand meter will have to meet the following basic requirements in order to qualify for our present day needs:

The first of these requirements is accuracy. Many of the existing devices do a fair job but when you total the consumption and check it with that shown on the regular meter index there will be a difference amounting in some cases to as much as seven percent. As a rule it is impossible to determine whether this inaccuracy occurred at the higher rates of flow or the lower rates. Therefore, in order to produce reliable data the demand meter should register the exact quantity of gas used—no more and no less.

Another important requirement is ease of installation and servicing. It costs money to make a complicated hookup on the customer's premises. Furthermore, people want a device that the average man can install. It should be possible to leave the demand meter on the premises for a reasonable period without making constant service calls which cost money and also cause annoyance to the customer.

Low first cost has been cited as another requirement in a demand meter and herein may lie one of the principal reasons why the industry has not made greater strides in this project. Admittedly, when the proper device reaches mass production stage, it should be reasonably inexpensive. However, we are still in the development stage and you can't expect to get very far in development work unless you're willing to spend some money. Too many of us have been sitting back waiting to see what someone else would develop, with the result that most of the thinking as well as the

Figure 1. Close-up of Niroc numerical type demand recorder connected to a five lt. gas meter

Presented at A. G. A. Distribution, Motor Vehicle and Corrosion Conference in Cincinnati April 4-6, 1949.

Copies of this paper are available at 25 cents each from the secretary, Technical Section, American Gas Association, 420 Lexington Ave., New York 17, N. Y.

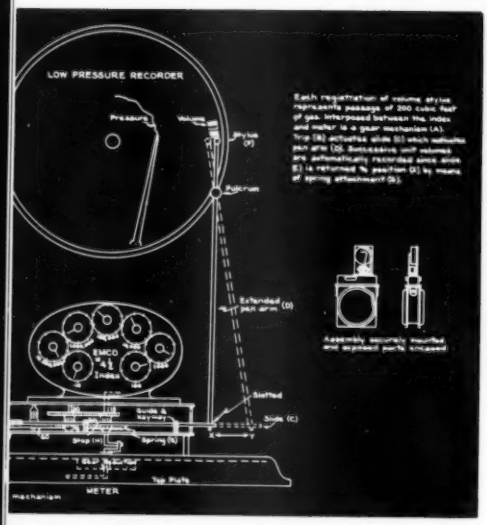


Figure 2. Diagram of mechanical device used in making industrial installation load studies

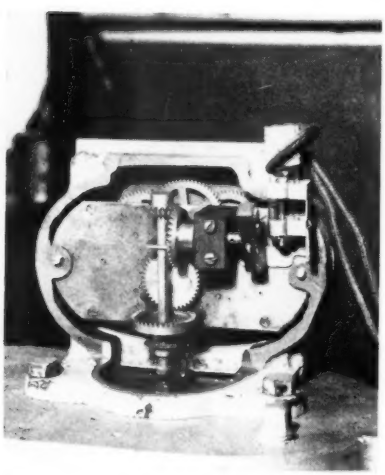


Figure 3. Magnetic mercoid principle applied to the index of an industrial type iron meter

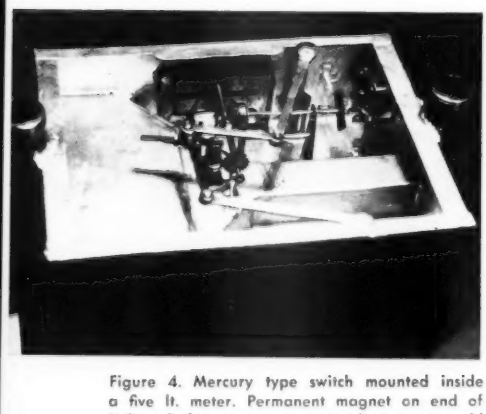


Figure 4. Mercury type switch mounted inside a five lt. meter. Permanent magnet on end of index shaft actuates a magnetic type mercoid

Figure 5. Interior view of recorder devised for use with meters using mercury type switches

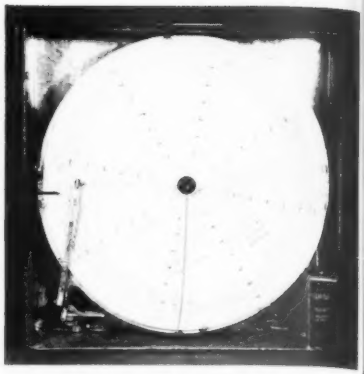


Figure 6. Close-up of recorder with char mounted for use with mercury type switches

spending has been done by relatively few people.

Another thing that is wanted is data that can be tabulated easily. The head of the rate bureau in one company reported that it had required 300 man days to read 9,000 chart days and this, of course, involved considerable expense. Tabulation of the data is a very definite part of the cost of demand metering.

A further requirement is that the instrument must provide a record in which one can place confidence. If you have to go over it several times to make certain that the consumption checks, the cost of tabulating becomes excessive. If possible, there should be some easy means of checking the total consumption on the demand meter with the corresponding consumption on the regular index to make certain that the record will be reliable before going to the trouble of posting it.

In some situations people are interested in getting a device that will record demands at varying pressures of temperatures. This added feature may be gilding the lily but let's see what we can do about it anyway.

In reviewing the foregoing requirements, we do not consider them unreasonable and it should be possible with the talent and experience within the industry to develop an answer.

With this thought in mind, letters were written to a number of people in the industry inquiring as to what types of devices they had developed or used for demand metering. From the data that is available we have prepared a summary of what has been done to date. No one would have the temerity to claim at this time that any of the devices shown constitutes the ideal demand meter but it may be that some of them with further experience and refinement may provide the answer to our problem.

To those who up to now have stood on the sidelines, we have this to say. It is a rare experience when any company gets good results the first year it attempts a demand study. Therefore if any of you contemplate such a study in the future, much time and expense can be saved by getting some knowledge and experience ahead of the time when you'll be "shooting for record."

Home-made mechanical devices

One device which is almost the ultimate in simplicity employs a cam attached to the index shaft of the meter which lifts a lever arm. The motion is transmitted through a stuffing box in the front gallery of the meter to operate a pen arm on a chart. By counting these impulses and multiplying by the size of the proving circle the rate of flow can be determined. This arrangement was used successfully on a limited scale by one of the larger utility companies.

Figure 2 shows another mechanical device that was used for making load studies in industrial installations. A supplemental index train was used to actuate a pen arm which registered a mark for every 200 cu.ft. of consumption on a chart. As the chart was mounted on a pressure gauge, the relationship between the pressure and consumption could be traced.

Most people are opposed to using electricity in any way connected to a gas meter. However, one or two companies have experimented along these lines using mercury type switches.

Figure 4 shows such a device mounted

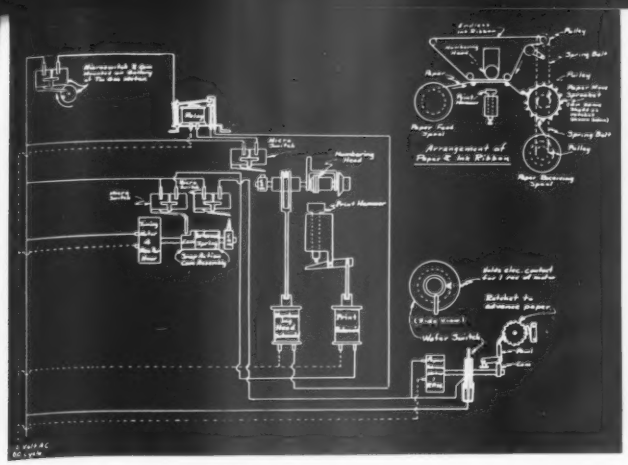


Figure 7. Schematic diagram of Niroc Recorder, a new device which prints a numerical record and designed specifically to meet requirements of the gas industry

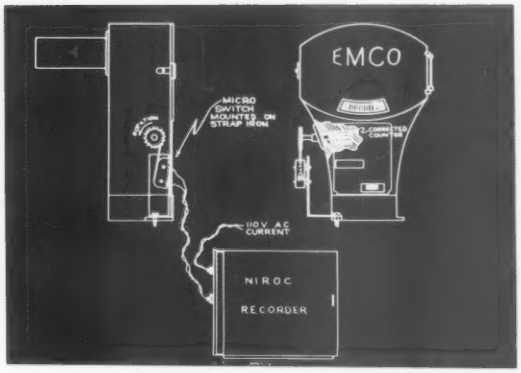


Figure 8. Artist's sketch of a demand recorder which is actuated by gear that drives corrected volume counter on an Emcorector

inside a five lt. meter. A supplemental shaft is mounted at right angles to the index shaft and a suitable reduction accomplished by means of bevel gears. A permanent magnet on the end of this shaft actuates a magnetic type mercoid which momentarily completes the electric circuit to the demand recorder.

Figure 3 shows this same magnetic mercoid principle applied to the index of an industrial type iron meter.

Figure 5 shows the inside of a recorder devised for use with the foregoing meters. In the lower right corner are the dry cells which provide the current to energize the solenoid in the lower left corner. As the solenoid is energized it moves the pen arm which marks a circular chart. The gear and rack in the lower center cause the base of the pen arm to shift gradually so that each successive revolution of the chart will show a record inside that of the preceding revolution.

Figure 6 shows the recorder with chart mounted and indicates the type of record available with this device. This equipment has been used with success by one of the larger utilities.

Figure 9 shows another type of recorder which also was devised for use with a mercury switch mounted in the meter. It utilizes ticker tape, for the record. The tape is caused to move by a knurled wheel against which it is held by two idlers. As the tape passes over a graphite roller, each impulse sent to the solenoid coil will cause a pencil mark on the tape. The knurled wheel, which is operated by a clock motor, makes one revolution per hour. On the rear face of the wheel are four pins which trip a spring mechanism so that there will be an additional mark on outer edge of the tape every quarter of an hour. A slide in the rear of the base holds six flashlight batteries to energize the solenoid.

In the majority of situations, the most desirable type of demand recorder would be one that will print numerically the consumption of the meter at stated intervals. The electrical industry has such a device in the General Electric P D Printometer which has been used for a number of years. The principle drawback to the development of such a device in the gas metering field has been the matter of cost and the size and weight of such equipment. Nevertheless, two very excellent efforts have been made along these lines in recent years.

The first of these devices, the Volco Recorder, was described in detail in the December 1945 issue of the A. G. A. MONTHLY (Figure 11), Mechanical impulses from the meter operate a "snap action" type of counter having exposed numerals, and a timing bar on the clock motivates a releasing trigger at stated intervals. This allows a gear to turn the receiving roll which advances the paper about ⅜ of an inch. A separate mechanism then turns the sprocket wheel ⅛ of a revolution, thereby depressing and releasing a lever arm which causes the print hammer to strike the paper and a carbon against the exposed numerals.

This device has the advantage of having been developed in several ways so that it can be operated either mechanically or electrically. It is well worth a second look as we question that it has received as much consideration by the industry as it deserves.

The second device that prints a numerical record *(Continued on page 50)*

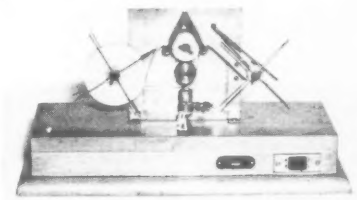


Figure 9. This type recorder for use with mercury switch utilizes ticker tape for the record

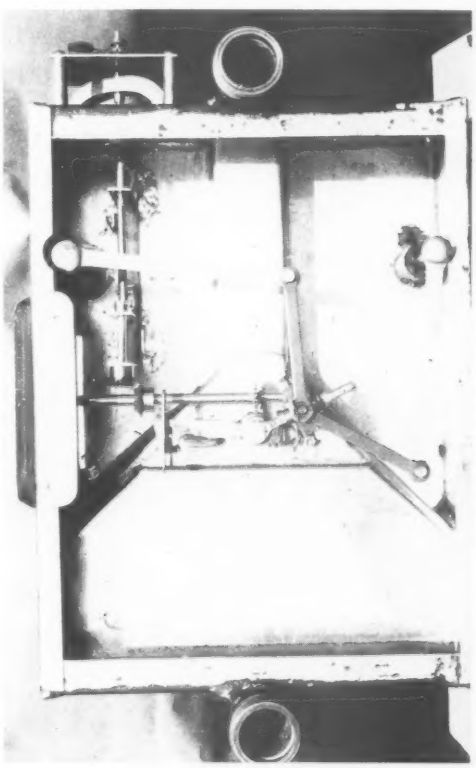


Figure 10. This clever method developed by one company employs a permanent magnet to convey motion of index shaft to exterior of meter

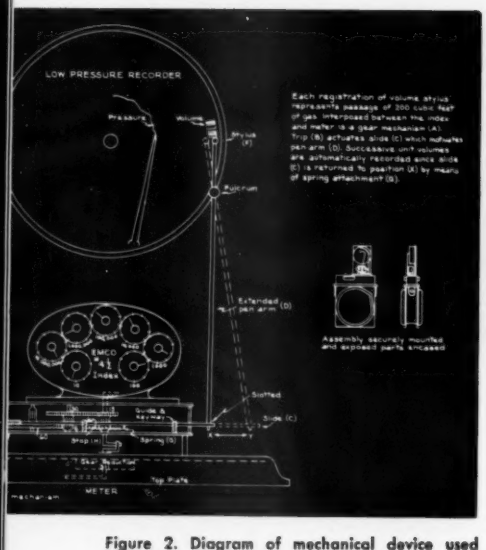

LOW PRESSURE RECORDER
Each registration of volume stylus represents passage of 200 cubic feet of gas interposed between the index and meter as a gear mechanism (A). Trip (B) actuates slide (C) which indicates pen arm (D). Successive unit volumes are automatically recorded since slide (C) is returned to position (A) by means of spring attachment (S).
Fulcrum
Extended (D) Pen arm
Assembly securely mounted and exposed parts encased
EMCO
Index
Slotted
Slide (C)
Spring (S)
Top Plate
METER

Figure 2. Diagram of mechanical device used in making industrial installation load studies

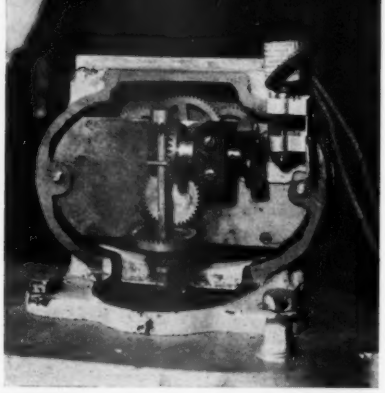


Figure 3. Magnetic mercoid principle applied to the index of an industrial type iron meter

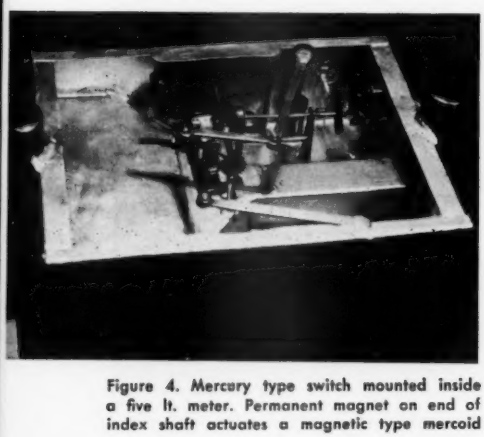


Figure 4. Mercury type switch mounted inside a five lt. meter. Permanent magnet on end of index shaft actuates a magnetic type mercoid

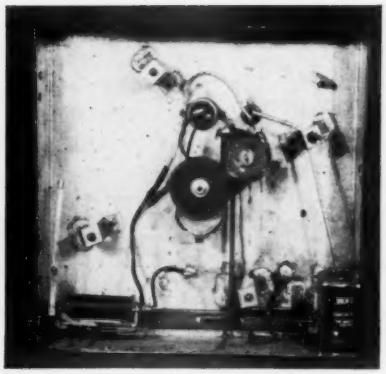


Figure 5. Interior view of recorder devised for use with meters using mercury type switches

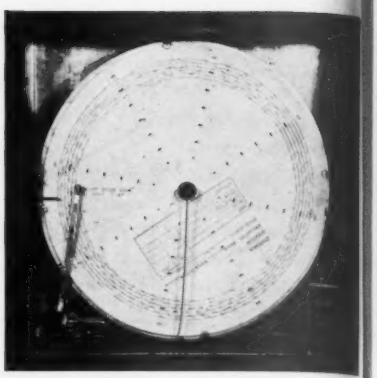


Figure 6. Close-up of recorder with chart mounted for use with mercury type switches

spending has been done by relatively few people.

Another thing that is wanted is data that can be tabulated easily. The head of the rate bureau in one company reported that it had required 300 man days to read 9,000 chart days and this, of course, involved considerable expense. Tabulation of the data is a very definite part of the cost of demand metering.

A further requirement is that the instrument must provide a record in which one can place confidence. If you have to go over it several times to make certain that the consumption checks, the cost of tabulating becomes excessive. If possible, there should be some easy means of checking the total consumption on the demand meter with the corresponding consumption on the regular index to make certain that the record will be reliable before going to the trouble of posting it.

In some situations people are interested in getting a device that will record demands at varying pressures of temperatures. This added feature may be gilding the lily but let's see what we can do about it anyway.

In reviewing the foregoing requirements, we do not consider them unreasonable and it should be possible with the talent and experience within the industry to develop an answer.

With this thought in mind, letters were written to a number of people in the industry inquiring as to what types of devices they had developed or used for demand metering. From the data that is available we have prepared a summary of what has been done to date. No one would have the temerity to claim at this time that any of the devices shown constitutes the ideal demand meter but it may be that some of them with further experience and refinement may provide the answer to our problem.

To those who up to now have stood on the sidelines, we have this to say. It is a rare experience when any company gets good results the first year it attempts a demand study. Therefore if any of you contemplate such a study in the future, much time and expense can be saved by getting some knowledge and experience ahead of the time when you'll be "shooting for record."

Home-made mechanical devices

One device which is almost the ultimate in simplicity employs a cam attached to the index shaft of the meter which lifts a lever arm. The motion is transmitted through a stuffing box in the front gallery of the meter to operate a pen arm on a chart. By counting these impulses and multiplying by the size of the proving circle the rate of flow can be determined. This arrangement was used successfully on a limited scale by one of the larger utility companies.

Figure 2 shows another mechanical device that was used for making load studies in industrial installations. A supplemental index train was used to actuate a pen arm which registered a mark for every 200 cu.ft. of consumption on a chart. As the chart was mounted on a pressure gauge, the relationship between the pressure and consumption could be traced.

Most people are opposed to using electricity in any way connected to a gas meter. However, one or two companies have experimented along these lines using mercury type switches.

Figure 4 shows such a device mounted

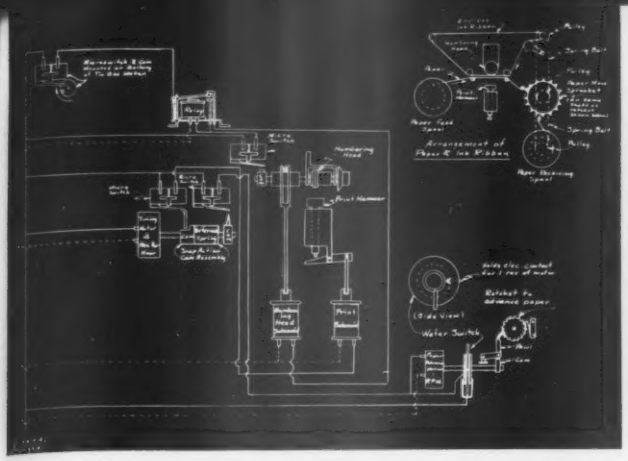


Figure 7. Schematic diagram of Niroc Recorder, a new device which prints a numerical record and designed specifically to meet requirements of the gas industry

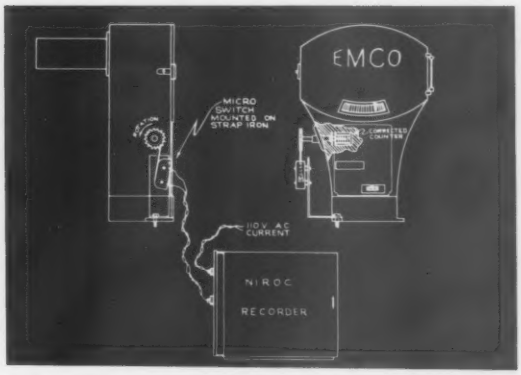


Figure 8. Artist's sketch of a demand recorder which is actuated by gear that drives corrected volume counter on an Emcorector

inside a five lt. meter. A supplemental shaft is mounted at right angles to the index shaft and a suitable reduction accomplished by means of bevel gears. A permanent magnet on the end of this shaft actuates a magnetic type mercoid which momentarily completes the electric circuit to the demand recorder.

Figure 3 shows this same magnetic mercoid principle applied to the index of an industrial type iron meter.

Figure 5 shows the inside of a recorder devised for use with the foregoing meters. In the lower right corner are the dry cells which provide the current to energize the solenoid in the lower left corner. As the solenoid is energized it moves the pen arm which marks a circular chart. The gear and rack in the lower center cause the base of the pen arm to shift gradually so that each successive revolution of the chart will show a record inside that of the preceding revolution.

Figure 6 shows the recorder with chart mounted and indicates the type of record available with this device. This equipment has been used with success by one of the larger utilities.

Figure 9 shows another type of recorder which also was devised for use with a mercury switch mounted in the meter. It utilizes ticker tape, for the record. The tape is caused to move by a knurled wheel against which it is held by two idlers. As the tape passes over a graphite roller, each impulse sent to the solenoid coil will cause a pencil mark on the tape. The knurled wheel, which is operated by a clock motor, makes one revolution per hour. On the rear face of the wheel are four pins which trip a spring mechanism so that there will be an additional mark on outer edge of the tape every quarter of an hour. A slide in the rear of the base holds six flashlight batteries to energize the solenoid.

In the majority of situations, the most desirable type of demand recorder would be one that will print numerically the consumption of the meter at stated intervals. The electrical industry has such a device in the General Electric P D Printometer which has been used for a number of years. The principle drawback to the development of such a device in the gas metering field has been the matter of cost and the size and weight of such equipment. Nevertheless, two very excellent efforts have been made along these lines in recent years.

The first of these devices, the Volco Recorder, was described in detail in the December 1945 issue of the A. G. A. MONTHLY (Figure 11), Mechanical impulses from the meter operate a "snap action" type of counter having exposed numerals, and a timing bar on the clock motivates a releasing trigger at stated intervals. This allows a gear to turn the receiving roll which advances the paper about ⅜ of an inch. A separate mechanism then turns the sprocket wheel ⅛ of a revolution, thereby depressing and releasing a lever arm which causes the print hammer to strike the paper and a carbon against the exposed numerals.

This device has the advantage of having been developed in several ways so that it can be operated either mechanically or electrically. It is well worth a second look as we question that it has received as much consideration by the industry as it deserves.

The second device that prints a numerical record *(Continued on page 50)*

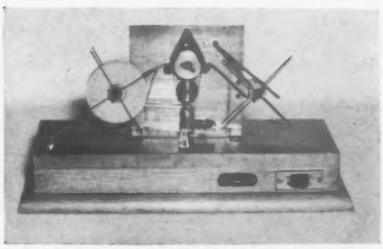


Figure 9. This type recorder for use with mercury switch utilizes ticker tape for the record

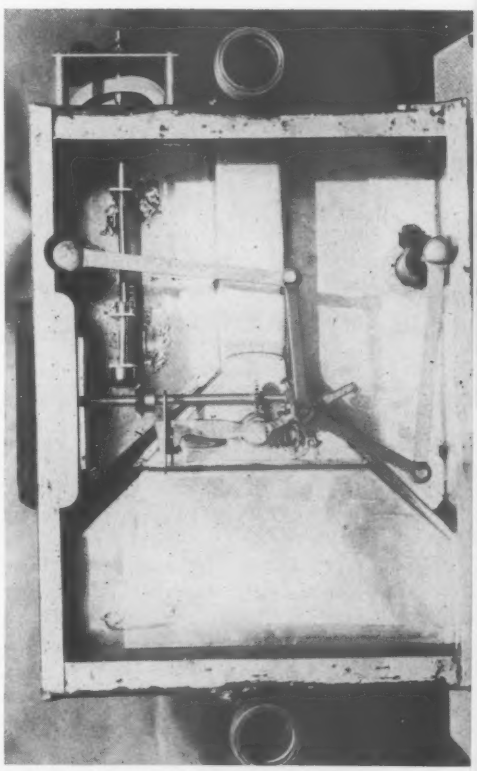


Figure 10. This clever method developed by one company employs a permanent magnet to convey motion of index shaft to exterior of meter

Chairman R. J. Rutherford addressing more than 300 delegates at the A. G. A. Domestic Research and Utilization Conference in Cleveland, Ohio

Domestic research gains cited

A PAR activity Important fruits of the industry's domestic gas appliance research and utilization work under the PAR Plan were brought into sharp focus in Cleveland, Ohio, on March 31 and April 1. More than 300 members of the American Gas Association and leading research institutions participated in sessions of the Association's Domestic Research and Utilization Conference, the first domestic gas forum on research progress in three years.

Accomplishments to date and the future course which has been plotted formed the general theme of the conference sessions. Critically examining gas research and utilization gains, delegates discovered for themselves why advances under the expanded PAR program have caused spokesmen of competitive services to raise envious brows.

Held jointly under the auspices of the Committee on Domestic Gas Research and the Utilization Bureau of the Association, the conference combined the consideration of strictly technical matters with an over-all view of industry needs and a thorough review of the research program in all its details.

Technical sessions were spelled off with top-flight luncheon speakers who pointed up significant trends to which the research and utilization programs are keyed. R. J. Rutherford, chairman, Committee on Domestic Gas Research, impressed delegates by an able job of presiding over general and luncheon sessions. H. Vinton Potter, A.G.A. coordinator of promotion, lead off the initial luncheon with a talk, "The Real Needs of Gas Appliances to Meet Customer Preferences." This provocative and inspiring address was followed by a searching analysis of current research projects, "What the A.G.A. Research Program Means to You," prepared by J French Robinson, past-president of A.G.A. and president, The East Ohio Gas Co., and effectively delivered by Karl Emmerling, sales manager of that company. On the second day, Frank J. Nugent, president, Gas Appliance Manufacturers Association, examined "Dynamic Forces That Are Affecting Gas Appliance Design and Manufacture."

Delegates attending the opening day were briefed on the status of all research projects and given an opportunity to question the experts. Laboratories staff members outlined the work done and the future needs in the three major fields of ignition by automatic pilots, burner design and combustion, and venting, aeration and humidity control. C. George Segeler, A.G.A. engineer of utilization, discussed public rules and ordinances as they effect the use of gas.

Dr. F. E. Vandaveer, The East Ohio Gas Co., presided over afternoon sessions at which up-to-date information on appliances, installations and their performance was presented and discussed. Discussion leaders were F. H. Schneider, Florence Stove Co., on cooking research; Robert C. Bryce, Philadelphia Electric Co., on water heating; William M. Myler, Jr., Surface Combustion Corp., on space heating; Edward J. Nelson, Rochester Gas and Electric Corp., on competitive services; and Thomas J. Perry, The Brooklyn Union Gas Co., on installation studies. Edwin L. Hall, director, A.G.A. Testing Laboratories, gave a lucid review of postwar revisions in A.G.A. Approval Requirements and what they mean to utility and manufacturer engineers.

General clinics for more detailed discussion of research, utilization practices and servicing of appliances were held during the second day. Dr. William R. Hainsworth, vice-president in charge of research and development, Servel, Inc., acted as moderator for morning sessions,

and John Beccia, The Connecticut Light and Power Co., for afternoon sessions.

Discussion leaders were C. C. Winterstein, The Philadelphia Gas Works Co., on automatic pilots and ignition; Howard A. Brown, Rochester Gas and Electric Corp., on kitchen ventilation and home humidity control; E. C. Adams, Adams Brothers Manufacturing Co., on venting problems and practices; E. W. Carson, Philadelphia Electric Co., on water heater design; Dr. F. E. Vandaveer on confined space installation of furnaces and water heaters; John J. Beccia on appliance installation costs, competitive services and experiences with magnesium rod protection; and Thomas J. Perry, The Brooklyn Union Gas Co., on lighting and ignition problems and the training of service employees.

An interesting highlight of the conference was a session on how to get the most use from research bulletins. George B. Johnson, manager, customer service, Minneapolis Gas Co., presided. Special pointers for manufacturers were presented by William R. Teller, Bryant Heater Division, Affiliated Gas Equipment Inc., and pointers for utility men by Herbert Luoma, Alabama Gas Corporation. Both speakers discussed principal methods of using A.G.A. research bulletins as outlined by prominent engineers and executives in the industry whom they had contacted.

Five new research publications were released at the conference and a record number of copies of all bulletins were sold. Publications released included reports on fundamentals of heat transfer in central gas space heating furnaces (Report 1108), and research in pilot design, construction and performance (Report 1123A), both conducted by the A.G.A. Laboratories. Two of the publications were engineering bulletins of Purdue University sponsored by A.G.A. —"Research in Venting Direct Gas Heaters When No Chimney Connections Are Available," (Report No. 2 in Research Series 105), and "Research in Home Humidity Control" (Research Series No. 106). The fifth new publication was "Galvanic Corrosion of Dissimilar Metals As Applied to Gas Hot Water Storage Heaters—Part II," conducted for Committee on Domestic Gas Research by Case Institute of Technology.

General comments from delegates showed that the conference was considered the most successful and best attended of all those held to date.

Conference headliners: (Left to right) E. S. Pettyjohn, Chicago; Frank J. Nugent, president, G. A. M. A.; R. J. Rutherford, conference chairman, and Dr. F. E. Vandaveer, program committee chairman

Friday morning speakers: (Left to right) Howard A. Brown, Rochester; Dr. F. E. Vandaveer, Cleveland; E. C. Adams, Pittsburgh; R. C. Bryce, C. C. Winterstein, Philadelphia; Dr. W. R. Hainsworth, presiding

Thursday afternoon speakers: (Left to right) Frank H. Schneider, Gardner, Mass.; Edward J. Nelson, Rochester; William M. Myler, Jr., Columbus, Ohio; Thomas J. Perry, Brooklyn; Robert C. Bryce, Philadelphia; Dr. F. E. Vandaveer, Cleveland, who presided. Up-to-date appliance data were featured

Friday afternoon speakers: (Left to right) Herbert Luoma, Birmingham, Ala.; George B. Johnson, Minneapolis; John R. Beccia, Waterbury; K. H. Flint, Kalamazoo, Mich., and William R. Teller, Cleveland

Photo by Rosskam, Standard Oil Co. (N. J.)

Management

In order to solve major labor problems management must know what workers want and think

By C. B. BOULET*

Wisconsin Public Service Corp.
Milwaukee, Wisc.

Looking at the over-all picture, there are two outstanding facts in current trends relating to employee-employer relationships which should be recognized. The first is the rising power of labor as represented by organized unions. Membership in unions has increased from about three million in 1933 to approximately 15 million today. Coupled with this rise has been growth in power.

In the past few years labor leaders have strained to direct this power into channels which would produce the greatest benefits for unions, their members, and of course their leaders. This drive for power of unionism is at a high level. Plans of both the AFL and CIO contemplate complete political organization of workers at the shop or ward level. There is no hesitancy on the part of union leadership to tell the world that they have their foot in the stirrup and expect soon to be in the saddle. The drive goes further than union membership through the press, the radio and even the schools. The doctrines and aims of unionized labor, the needs of more power for labor are being preached. Labor is coming of age. We must recognize this fact.

Don't misunderstand me. I have no fight with labor. These efforts on the part of labor are not necessarily illegitimate. They follow the pattern of other pressure groups, but because of the scope of union organization and the planning of its program, union efforts will bear more fruit than the divided efforts of other less organized groups. I am merely pointing out the facts as they exist and only because they have a bearing not only on the labor relations picture but also on the national economy. Labor is

...p in an "age of security"

rapidly drawing into a position where any program which it sponsors will, of necessity, be given consideration by Congress and many of the plans and programs of labor will be activated, if not through collective bargaining, through compulsion of law.

Organized labor, because of increasing resistance to demands for higher wages, is directing its efforts toward securing greater social benefits for its members. The drive is two-pronged—consisting of demands on employers for increased benefits on the one hand, and similar demands on government on the other.

The push for greater social benefits, including higher old age pensions, health insurance, disability insurance, unemployment compensation, and socialized medicine, is finding a sympathetic ear in the halls of Congress. Under an assumed mandate from the people the party in power has proposed liberalizing changes in our present social legislation as well as the addition of new measures to give full protection against want, fear, sickness, accident and death, virtually a complete cradle-to-the-grave program.

There is a disturbing effect in the coupling of labor's increased power and the use of this power to broaden social benefits dispensed by the central government. The joining of labor's demands to the program of the Administration to increase and add to these benefits is quite definitely accelerating the trend which is gradually changing this country from a republic with a democratic form of government with free enterprise, from a capitalistic system, to a nation operating under a system of socialism, or statism, similar to the forms of government which have long existed in many European countries and which more recently have been developing in England.

There may be some skepticism regarding this statement, but a quick glance at the principles of socialism as expounded by its disciples and incorporated in the party platform in 1932, and a comparison of these tenets with what we have today is convincing evidence that we are well on the road to socialism in this country.

The Socialist platform of 1932 included a number of planks which at that time were deemed radical and not democratic. Since 1932 many of these socialist ideas have been incorporated in our democratic system of government.

Governmental control

Mr. Truman in his January message to Congress suggested additional government ventures into other fields—steel, for instance. Here are some other socialist ideas that are facts today. We have government control of prices, government control of credit, currency and banking, high graduated income taxes, high taxes on corporation profits, government payments to the aged and disabled, government payments to the unemployed, minimum wages set by law, government in the insurance business, and high inheritance taxes. We have proposals in Congress for socialized medicine and for further government inroads into private business. We have all of these things and the trend is for more and greater government control of our entire economy.

Coupled with all of these things, is the constant effort on the part of our economic planners to create an antagonistic attitude on the part of labor and the public toward business. They know well that so long as a spirit of cooperation exists between labor and industry, so long as the public is quiescent or friendly toward business, plans to develop a controlled economy are more and more difficult to execute.

To simply point to a trend and voice oppostion to a developing situation without an effort to discover the causes or the reasons for the change or the remedies if the change is not good, would be a waste of both time and effort. On the other hand, to attempt a careful analysis of all the causes of the development of a super-government which affect all phases of our economy would require too much space. I will try therefore to confine my conclusions to those factors which are involved only in the relations between management and labor.

Where has the system of free enterprise which has produced more material wealth and benefits for all groups of citizens, failed? Why have workers' organizations turned to government for security as an alternate means of achieving their desires? Is this an Achilles heel in the management of the free enterprise system?

If so, what course should industrial management set which will meet the requirements of an age in which security is paramount in the minds of workers? What position should management take when it is faced with demands of labor provisions which will give greater social security and protection to all workers with the threat that unless management finds a solution, government will do so?

Certainly, if management is to attempt to solve these problems, it must know something more of what workers think and what they want.

Careful research has given strong credence to the statement that workers' desires are not satisfied with high wages alone nor are they satisfied with automobiles, radios, electric appliances or the other material things of life alone. Testing of employee thinking has indicated that underlying and fundamental desires of workers fall in just a few categories. Two of these are perhaps the

---

*Chairman, Industrial Relations Committee, Edison Electric Institute. Presented at National Conference of Electric and Gas Utility Accountants in Detroit, Mich., April 11-13, 1949.

most important to this discussion.

The first is security. Workers want security of employment—a steady job—rather than a high wage with a chance of lay-off, a chance of loss of income. Workers fear unemployment; they fear a return to depression with a need for accepting charity or the dole to maintain life.

Workers want security against a destitute old age. They want security against inability to earn because of physical handicaps due to accident or poor health. They want security against misfortune to themselves or family.

Facing the facts as they exist today and knowing something of the thinking of men individually and collectively, management must next take stock of what it has done and what it can do to meet the challenge.

Perhaps through an enumeration of several definite actions we can arrive at a fairly well-defined program.

(1) Solution of any problem requires investigation, research, thought, and discussion, whether the problem be one of proper materials to be used, technological developments, invention, plant improvement, sales, advertising, or public relations. What is true of all these problems is likewise true of human relations.

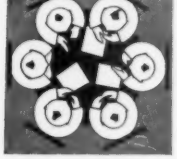
If management is truly interested in meeting what well may become a challenge to the effectiveness of the free market system in its relationship to human welfare, it must devote a substantially larger part of its thinking and planning to the solution of these problems which are foremost in the minds of workers.

Management must come to the realization that an antagonistic approach to problems of human welfare and constant and unrelenting opposition to these deep-seated objectives and desires of workers in the free enterprise system, will not solve the problem, but instead will turn these demands into channels which will eventually seek a new system and perhaps a new form of government.

(2) Management must understand the fundamental facts incident to benefit plans. It must know much more than it has in the past regarding pension plans, for instance. It must have knowledge of actuarial requirements, necessary reserves, proper benefits, costs, types of plans, relation of employees' earnings to benefits, and problems involving the installation and operation of pension plans.

The same is true of other plans for social benefits. It is impossible for management to plan wisely or adequately for any type of security program without first being familiar with the facts.

(3) Management must seek to develop techniques designed to level out the mountains and valleys of employment. The *(Continued on page 46)*



Industrial relations round-table

Prepared by
A. G. A. Personnel Committee

● **Bulletin No. 940, "Occupational Outlook Handbook,"** of the Bureau of Labor Statistics of the United States Department of Labor should be useful to personnel men who have occasion to advise young men on jobs and careers. The volume covers a large number of specific jobs, occupations and professions and describes the chances of getting jobs, how to go about it, qualifications needed, training, experience, pay, etc. A copy can be secured from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. for $1.75.

● **Alcoholism** has been recognized as a basis for retirement through disability by the Consolidated Edison Company of New York since January 1, 1947, according to an article in **The New York Times** of April 12. The company in doing so accepts the principle that alcoholism is a disease.

Company rules provide that employees of two years or less continuous employment may be discharged for the first violation. Beyond that to 15 years' employment the employee may be warned and placed on probation. In the case of longer-term employees the case will be studied, and if it is found to be one of chronic or psychopathic alcoholism, the "employee should be recommended for the disability roll."

● **Any company** which may be considering a "new business" contest among employees should scrutinize the opinion of the administrator of the Wage-Hour Law, dated March 25, 1949. In the case of a bank which had started a new business contest and was awarding prizes, the administrator ruled that the time spent by employees in the contest was time worked and subject to the minimum wage provisions of the Wage-Hour Law.

● **In the case of the Cuffman Lumber Co.,** the N.L.R.B. ruled that it was illegal for a company during a strike to take a private poll of employees on whether they wish to come back to work.

● **The Heller Committee** for Research in Social Economics of the University of California has again issued a new set of standard budgets for four-person families in the San Francisco area. In September 1948 the budget was $4,111.22 for wage earners. The Heller Committee has been preparing such budgets since 1939.

● **Arbitrator James J. Healy** ruled in the case involving C. B. Cottrell & Sons Co., Westerly, R. I., that employees who left the company from the time wage negotiations were opened to the time of a wage strike and didn't return from the strike are entitled to retroactive benefits of the wage settlement. The International Association of Machinists argued that since the wage reopening clause provided for an effective date of a revised wage schedule and contained no restricting qualifications, the retroactivity of new rates should not be limited to those employees who returned to work after the strike.

● **Arbitrator Charles O. Gregory** has ruled that the Stewart-Warner Corp., Chicago, must combine several pending grievances in one arbitration session as the C.I.O. United Electrical Workers requested. There were six grievances pending and the company opposed combining them on the basis that the arbitrator might divide up the awards in order to satisfy both parties. The grievance procedure outlined in the union contract did not contain any reference to the number of grievances which might be considered at one time. Mr. Gregory does not think that the union would deliberately try to allow grievances to accumulate because it is his opinion that both parties want settlements as quickly as possible.

● **The A.F.L. Retail Clerks** recently established a pension plan which will permit
(Continued on page 37)

Committee close-up

Huge gas construction program reviewed by Committee on Economics

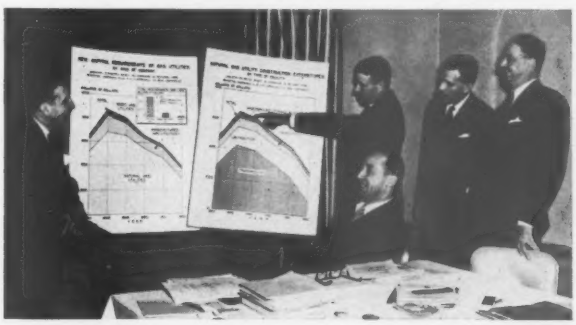
Financing problems incident to the gas industry's five-year, $3.7 billion construction program were studied closely at April 8 meeting of Association's Committee on Economics in St. Louis, Missouri.

Chairman Robert E. Ginna directed the efforts of this hard-working general committee into several important channels. Plans were prepared for a study of the economics of gas house heating, a particularly timely and vital subject. Approximately 25 gas companies will be asked to participate by making analyses of gas house heating load characteristics and related problems.

Committeemen also considered the possibility of resuming publication of a comparative statistics series which was halted in 1942. These and other fundamental problems under the general categories of general economic research, market and sales research, and statistical research, are being pushed by the group along the "economic frontiers" of the gas industry.

Statistical Subcommittee group studying possible revision of "Gas Facts" and other publications. Walter E. Caine (left), Stephen S. Mason, chairman; Ralph L. Braucher, and Harry A. Weitzmann

Discussing proposed house heating study, (left to right) Edward W. Morehouse, John W. West, Jr., Walter E. Caine, Walter J. Herrmann, George Baird



Five-year construction program is studied by Chairman Ginna (left), E. W. Morehouse, Gordon Griswold, Robert C. Owers, O. R. Doerr (seated)

Working for inclusion of broader gas data in 1950 U. S. Census of Housing. (L. to r. around table) G. C. Griswold, Brooklyn; S. S. Mason, Washington, D. C.; W. J. Herrmann, George Baird, New York; R. C. Owers, Washington, D. C.; Secretary Otto E. Zwanzig; Chairman Ginna; W. E. Caine, Shreveport; John W. West, Jr., A. G. A.; O. R. Doerr, San Francisco; E. W. Morehouse, New York; H. A. Weitzmann, Rochester; R. L. Braucher, Chicago

Long-term planning for mains

BY GEORGE A. S. COOPER

Mechanical Engineer
Public Service Electric and Gas Co., Newark, N. J.

Long-term planning for mains is very important, in order that the full benefit of the low cost of mains of larger capacity can be utilized to reduce distribution costs.

The purpose of a gas distribution system is to convey gas from a source of supply to a customer.

Mr. Cooper (above) offers valuable help to gas men interested in reducing distribution costs

Distribution systems, comprising mains, compressor stations and operation must be so planned that conveying gas to the customer shall be done at a minimum cost, balancing the cost of pumping at various pressures with the cost of mains whose capacities vary with the different pressures.

The circumstances surrounding any two communities in the United States are not identical. It is necessary, therefore, to study each problem individually to design a system most suitable for existing and anticipated local conditions and requirements.

These are days of high cost of mains, lower load factors of heating business, general industrial unrest and similar other causes which necessitate extreme caution on the part of the distribution engineer.

One of the most serious pitfalls in planning is failure to provide new mains of adequate size because of their present high cost and the uncertainty of continuous growth of business. Few persons at present wish to be quoted on estimates of future growth for periods beyond five years and hence the tendency is to lay mains for such periods and lay additional mains later, if the growth continues.

Such a program can result in a very expensive investment of small mains, resulting in high cost/M delivered. By analyzing the situation, a few larger mains can be laid at less cost, resulting in costs/M delivered as low as one third the cost of installing smaller mains.

As an example, consider a program of laying mains for each five years of growth. In the sixth year there would be two mains in service. The cost would be almost equal to one single main twice their diameter. A computer shows that a main has 6.3 times the capacity of a main one half its diameter. The single main would have 6.3 times the capacity of either of the small mains, or a net of 3.15 times the capacity of the two mains at very little additional cost.

Suppose a depression occurred at the seventh year? The investment in the ground is almost equal in either case, and the difference in investment, being small, has many offsetting credits such as fuel and investment in pumping stations, etc. because of the lower pressures which could be maintained throughout the depression period.

Table I illustrates the cost/M delivered by various systems. It shows typical trunk lines 5, 10 or 15 miles long operating at 15 pounds initial and five pounds terminal, with various sizes from four to 24 inches. The capacity includes provision for 25 percent additional demand for takeoff along the line, and the cost/M delivered are for a 30 percent load factor. These costs are adjustable for other pressure ranges by applying ratios of capacities obtained from the flow formula for gas in pipelines.

Table II shows the cost of large size pumping stations and fuel costs for 5, 15, 30 and 50 pounds, reduced to cents/M delivered at a 30 percent load factor.

All prices are those used in current estimates in 1948 for Public Service Electric and Gas Company.

Analyzing these costs, the small mains show high cost/M.c.f. delivered, the cost for a ten-mile line being 55.08 cents for four-inch mains, dropping to 3.4 cents for 24-inch mains. The costs of pumping range from 1.61 cents at 5 pounds to 6.62 cents at 50 pounds. The fuel cost for 15 pounds is shown at 0.92 cents/M delivered.

Raising pressures will lower the cost of mains/M delivered, and will increase the pumping costs. A comparison of costs/M with pressures in the 12-inch and 24-inch mains at 15 pounds and 50 pounds is as follows:

Pressure range	15-5 lbs.		50-5 lbs.	
Ratio of Capacity	1		2.8	
Size of main	12″	24″	12″	24″
Cost of mains ¢/M	8.49	3.40	3.01	1.21
Cost of pumping ¢/M	2.75	2.75	6.62	6.62
Total ¢/M	11.24	6.15	9.63	7.83

Copies of original paper, presented at A. G. A. Distribution Motor Vehicle and Corrosion Conference in Cincinnati, April 4-6, 1949, are available at 25 cents each from secretary, Technical Section, American Gas Association, 420 Lexington Ave., New York 17, N. Y.

Note that for the same distance the cost is 1.61 cents/M cheaper to deliver gas in the 12-inch line at 50 pounds than at 15 pounds, and it is 1.68 cents/M cheaper to deliver gas in 24-inch line at 15 pounds than at 50 pounds. Also the cost for the 12-inch will never be less than 9.63 cents/M delivered, whereas the cost of the 24-inch will drop to 6.15 cents when the main is fully loaded.

The capacity of the 12-inch main, ten miles long, shown in Table I, is 231-M/hour which is here selected as the estimated increase in consumption for each five-year period for this particular example. The cost of one 12-inch main is $528,000. At the beginning of the sixth year, a second 12-inch main is to be laid at $528,000 or a total cost of $1,056,000. The cost of the 24-inch main is $1,320,000 which is 25 percent more than the two 12-inch mains.

By laying the 24-inch line at the beginning of the first period the additional cost would be $792,000 for five years and $264,000 for the next five years. For this additional cost at the beginning of the sixth year the capacity in the ground of the large main is 315 percent of the two 12-inch mains, and the investment is only 25 percent more. Since the investment is only 25 percent more the cost/M of any gas delivered by the 24-inch is only 25 percent more per M delivered for the same quantity delivered by the two 12-inch mains. The cost of six small mains is $3,168,000 or $1,848,000 more than the one large main at $1,320,000. Is it not cheaper to pay interest on $792,000 for five years than on $1,848,000 for 20 years or more.

Figure 1 shows the relative investment of one large main and multiple mains half the diameter. The savings possible with the one large main over the extra investment of the first few years of its life is shown by comparison of the two cross-hatched areas, and also how soon the extra investment is completely returned.

Figure 2 shows the relative pressures required for each of the two cases. Where 12-inch mains are laid as required, the pressures must rise to full load conditions just prior to the time an additional main is to be laid. In the case of the one large main, the full load pressures would not be required until after the seventh small main was laid. In the meantime, the pressures are less and in the sixth year the difference is

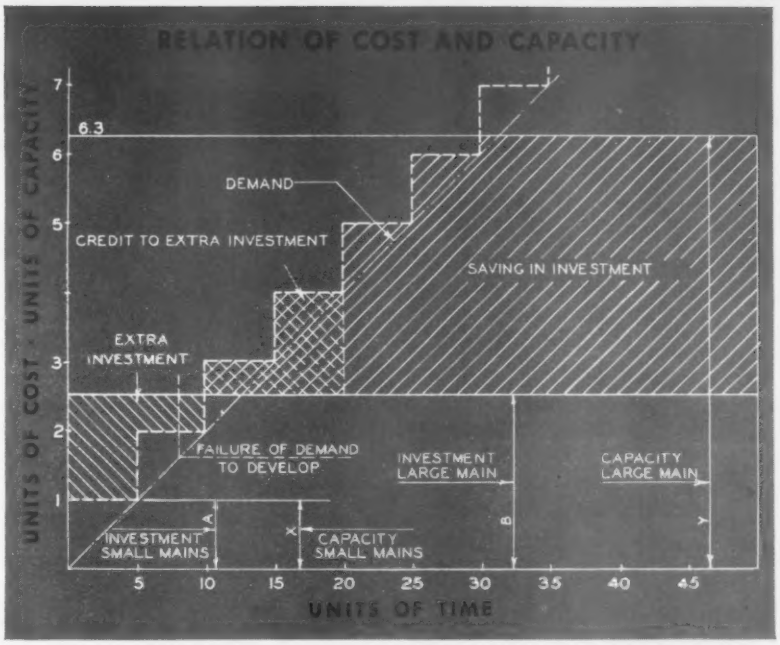


Figure 1 (above) shows saving in investment for one large main over investment for small mains laid as demand requires. (Large main, diameter 2D, shown by line; small mains, diameter D, broken lines)

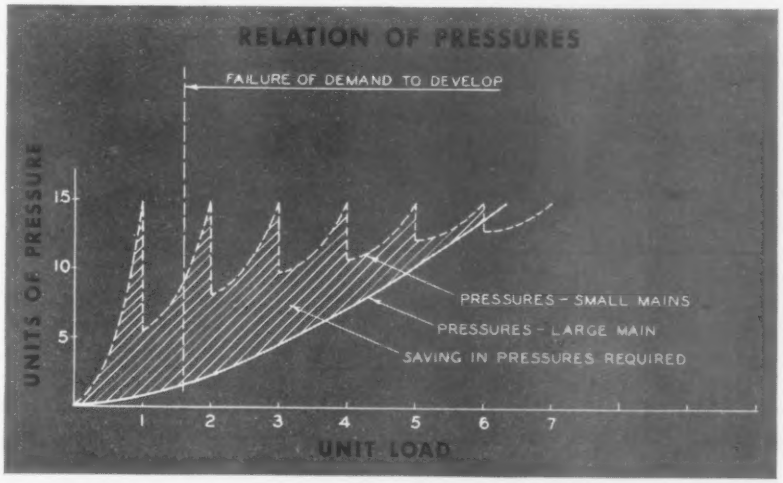


Figure 2 (above) shows the saving in pressure which is required for one large main over the pressure required for small mains laid as the demand required. Table I appears at bottom of this page

COST OF MAINS PER M DELIVERED

Size of Main	*4"*	*6"*	*8"*	*12"*	*24"*
Cost per foot	$ 3.50	$ 4.60	$ 6.00	$ 10.00	$ 25.00
Cost per Mile	18,500	24,300	31,700	52,800	132,000
5 miles	92,500	121,500	158,500	264,000	660,000
10 miles	185,000	243,000	317,000	528,000	1,320,000
15 miles	277,500	364,500	475,500	792,000	1,980,000
	Capacity M/Hour 0.65 Gravity 25% Additional for Take Off. 15 lbs. Initial 5 lbs. Terminal				
5 miles	17.5	52.0	112.5	326.0	2060.0
10 miles	12.5	36.8	80.0	231.0	1460.0
15 miles	10.0	29.5	65.0	188.0	1200.0
	Annual Charges 9.65% of Cost (6-1/2% Return Plus Amortization & Taxes)				
5 miles	$ 8,950	$11,700	$15,300	$25,500	$ 63,700
10 miles	17,900	23,400	30,600	51,000	127,400
15 miles	26,850	35,100	45,900	76,500	191,100
	Annual Delivery 30% Load Factor (2600 Maximum Hours) MCF				
5 miles	45,500	135,200	292,500	847,600	5,356,000
10 miles	32,500	95,700	208,000	600,600	3,796,000
15 miles	26,000	76,700	169,000	488,800	3,120,000
	Cost per M Delivered (Annual Charges Divided by MCF Delivered)				
5 miles (cents)	19.67	8.65	5.23	3.01	1.2
10 miles (cents)	55.08	24.45	14.71	8.49	3.4
15 miles (cents)	103.27	45.76	27.16	15.65	6.1

TABLE II
ESTIMATED COST OF COMPRESSOR STATIONS AND FUEL

Pressure Range	*0–5 lbs.*	*0–15 lbs.*	*0–30 lbs.*	*0–50 lbs.*
Capacity CF/hr (0.65 gr.)	1,500 M	1,500 M	1,500 M	475 M
Horsepower	820	1,900	3,200	1,130
Steam lbs./hr				
200 lbs. 28 HG	—	20,000	32,000	—
100 lbs. 26 HG	11,000	—	—	17,500
Cost of unit	$69,000	$110,000	$175,000	$70,000
Steam lbs./hr	11,000	20,000	32,000	17,500
15% auxiliaries	1,650	3,000	4,800	2,600
Total	12,650	23,000	36,800	20,100
	Cost of Compressor Station			
Cost of unit	$ 69,000	$110,000	$175,000	$ 70,000
Installation	69,000	110,000	175,000	70,000
Buildings etc.	69,000	110,000	175,000	70,000
Total	207,000	330,000	525,000	210,000
33⅓% spare	69,000	110,000	175,000	70,000
Total	$276,000	$440,000	$700,000	$280,000
	Cost of Boiler Plant			
Steam (lbs. per hour)	12,650	23,000	36,800	20,100
Cost @ $9.00/M	$113,850	$207,000	$321,200	$180,900
	Cost of Compressor Station & Boilers			
Total	$389,850	$647,000	$1,021,200	$460,900
Annual charges 10.96%	43,000	71,000	112,000	50,500
Cost per M Max. Hour	28.60	47.50	74.50	106.00
(2600 Hours)	1.10¢	1.83¢	2.87¢	4.08¢
	Cost of Fuel (Steam)			
Steam (lbs. per hour)	12,650	23,000	36,800	20,100
Cost @ 75¢/M lbs.	$9.50	$17.25	$27.60	$15.10
Cost per M	0.633¢	1.15¢	1.84¢	3.18¢
80% Power adjustment	0.51¢	0.92¢	1.47¢	2.54¢
Total cost 30% LF	1.61¢	2.75¢	4.34¢	6.62¢

considerable, providing a definite credit in pumping costs, which would amount to as much as 0.50 cents/M delivered if a 15-pound system was in use, which would be a credit entirely to the extra 25 percent cost of the larger main.

There is also a saving in the investment of the pumping station. It was shown that the 24-inch main is more economical at 15 pounds than at 50 pounds, whereas the 12-inch required a 50-pound station for minimum costs. There is no necessity to change to high pressures to reduce costs since it has already been shown that at the beginning of the sixth year the costs of mains are nearly equal. Turbo-type compressors rated at 150M/hour at 15 pounds actually deliver approximately 250M/hour at seven pounds. It may not be necessary during the early period of the large main to install as many units as for the two 12-inch mains since two units at 250M/per hour would deliver more at seven pounds than three of the same units at 15 pounds.

In laying mains for a large anticipated new load such as house heating it has been shown that lower pressures are required for the same distance as the size of the main increases. There are many instances where repumping is needed for domestic customers. The additional mains required where there is 20-30 percent additional saturation of house heating anticipated may be of such size that the cost/M delivered by the large main may drop enough to warrant changes in design to permit shutting down or curtailing the use of the outlying station.

Increasing the B.t.u. content of a gas will allow more energy capacity for the distribution system, resulting in lower costs per therm delivered.

Table III shows the change in energy capacity of mains by raising the B.t.u. content of the gas.

Raising the B.t.u. content from 525 to 700 B.t.u. will provide 33 percent additional energy capacity or decrease the cost per therm, delivered, by 75 percent of the cost at 525 B.t.u. This will not warrant a change in size of mains laid. The reason is as follows:

The various sizes of mains in common use in gas distribution systems may be divided into two groups

Group A	Group B
2	3
4	6
8	12
16	24
24	36

Capacities of sizes in Group A bear definite relationship to sizes in Group B. Any main in group B has three times the capacity of the main directly opposite in Group A. It is also true that a main has 6.3 times the capacity of a main half its diameter. Any main in Group A has 2.15 times the capacity of the next smaller size in Group B.

The comparison of capacities of mains by groups are therefore:

Group A	Group B	Group A (Next Size)
100%	300%	630%

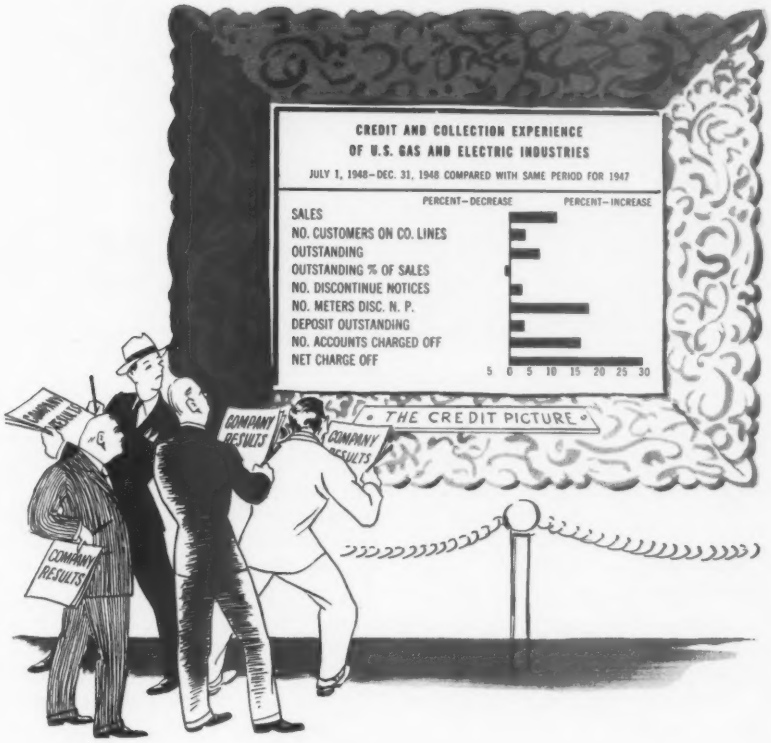
As mentioned before, the increase in B.t.u. content from 525 to 700 will provide 33 percent additional energy capacity which is far below the percentage change in capacity by sizes.

Change in B.t.u. content may defer laying a new main for a short period but will in no case compensate for change in sizes of mains.

In summary, program for laying mains to be fully loaded within five years will lead to installation of small expensive mains and possibly excessive investment in pumping stations. If a main is 20 percent loaded in five years it is a good investment if there is anticipated continued growth. Large mains cost more per foot than small mains but the cost/M delivered can be equal to the cost resulting from use of a small main half the diameter, with any reasonable increase in business for a period as short as five years.

Increasing pressures to lower costs is not warranted when a new main is contemplated if there is any hope that the territory will develop, requiring additional services from the utility. Change in B.t.u. content will only defer laying a main for a short period. Should estimates for five years be reasonably close, the large main economies are established, and the resulting saving in investment during the remaining life of the main may show *(Continued on page 47)*

Industry gets credit picture



A valuable new perspective of the credit and collection picture in the gas and electric industries is provided by a study recently completed under the direction of H. D. Amann, The Brooklyn Union Gas Company. Results of the project, which will be continued on a semi-annual basis, were announced to the industry during the joint conference of electric and gas utility accountants in Detroit, April 11-13, 1949.

As the result of a survey conducted by the committee, basic data indicating the collection experience of the gas and electric industries is now available for the first time. Forty-three of 64 gas, electric and combination companies surveyed have disclosed their collection results. These companies represent a fair cross-country sample located in the nine census regions now commonly used by industries for statistical purposes. As far as was practicable an equal number of companies were selected from the nine geographic regions of the country.

Collection results are usually gauged by the promptness with which customers make their payments, and in the final analysis, how much was charged off. Although it does not show in "The Credit Picture," it was necessary to secure these data in dollars and in actual numbers, in or- *(Continued on page 46)*

Regions listed in chart below are broken down by states at the end of this article.

REFLECTION OF THE CREDIT AND COLLECTION EXPERIENCE OF THE GAS AND ELECTRIC INDUSTRIES

(JULY 1, 1948–DEC. 31, 1948) • PERCENT–INCREASE OR DECREASE OVER CORRESPONDING PERIOD–1947

	NEW ENGLAND	MID-ATLANTIC	EAST NORTH CENTRAL	WEST NORTH CENTRAL	SOUTH ATLANTIC	EAST SOUTH CENTRAL	WEST SOUTH CENTRAL	MOUNTAIN STATES	PACIFIC STATES	UNITED STATES TOTALS
SALES	10.9	9.6	9.4	10.4	12.9	16.3	8.0	9.2	14.3	10.6
NO. CUSTOMERS ON CO. LINES	2.4	1.6	2.0	3.1	5.5	5.7	6.8	7.3	7.9	3.5
OUTSTANDING	10.3	5.3	8.1	6.7	9.9	13.6	15.4	7.7	8.1	7.4
OUTSTANDING % OF SALES	–.1	–.4	–	–.3	–.4	–.1	.5	–.2	–.5	–.2
NO. DISCONTINUE NOTICES	–27.1	7.1	20.7	4.1	–3.4	14.2	36.0	–12.5	19.2	3.9
NO. METERS DISC. N. P.	–7.0	17.1	35.9	6.2	33.5	5.6	38.4	4.5	3.1	18.2
DEPOSIT OUTSTANDING	–2.2	5.7	–16.8	1.6	7.4	7.8	7.3	3.6	11.2	4.0
NO. ACCOUNTS CHARGED OFF	9.1	6.4	13.7	10.2	31.4	22.0	30.0	54.7	37.1	15.7
NET CHARGE OFF	53.9	26.4	31.3	14.8	45.4	13.9	18.3	85.3	44.8	29.9

L. E. REYNOLDS, *CHAIRMAN* • JOHN H. W. ROPER, *VICE-CHAIRMAN*

Conference indicates broader role

The key position which accountants occupy in the business structure of the nation was never more evident than at the National Conference of Electric and Gas Utility Accountants, April 11-13 at the Book-Cadillac Hotel, Detroit. Speaker after speaker stressed the vital role of accounting in checking the trend toward socialism, in promoting sound business relationships with government, in creating the conditions necessary to efficient management and to good industrial and public relations.

Sponsored jointly by the American Gas Association and the Edison Institute, the conference attracted an all-time record registration of 717 persons, considerably more than last year's record gathering. Interest-packed business sessions were augmented by an impressive exhibit of accounting machines and office equipment which included all the major firms serving this field.

L. E. Reynolds, The Connecticut Light and Power Co., Hartford, A. G. A. accounting chairman, and A. G. Mitchell, Philadelphia Electric Co., E.E.I. accounting chairman, presided at the conference and contributed much to its success by their able teamwork.

Opening the Monday afternoon general session, Co-Chairman Mitchell described the three-fold objectives of the conference as (1) raising the accounting profession's sights to broader horizons, (2) providing up-to-the-minute technical information, and (3) providing a medium for personal contact. He warned of the growth of "isms" and called on the accountants to erect bulwarks against such inroads.

The welcoming hand of the local utilities, Michigan Consolidated Gas Company and Detroit Edison Co., was extended by A. V. McRee, secretary, Michigan Consolidated, who invited the delegates to see the local utility's accounting systems in action. On all sides was evidence of the interest the local companies had taken to insure the success of the meeting.

Mr. Reynolds read a message from H. Carl Wolf, managing director, A. G. A., commending the cooperative A. G. A.-E. E. I. relationship manifested by the joint conference. Mr. Wolf's message stressed the strength of the jointly-sponsored programs and the tools for appraising the industry's progress.

A forthright exposition of the position of accountants in a public utility was presented by D. A. Hulcy, president, Lone Star Gas Co., Dallas, and vice-president, American Gas Association, who declared that accountants will continue to grow in importance in the company executive branch. Accountants must have imagination and enthusiasm as well as a knowledge of facts and people in order to prepare long-range programs, he said. He emphasized the need for good judgment and proper appearance of reports, pointing out that no group is better able to interpret the company's position and policies. In conclusion, Mr. Hulcy warned that the competitive free enterprise system is on the defensive and urged accounting officers to tell the story of profits in their true light. "Earnings today may be high," he said, "but new money needed is three times prewar figures."

Office working conditions and practices in accounting departments were dramatically highlighted with the aid of skits by J. F. Farley, New York State Electric and Gas Corp., Ithaca, chairman,

Carter E. Shields (left), and Walter L. Cisler (center), both from Detroit, Mich., conferring with John W. Roper, vice-chairman, A. G. A. Accounting Section

D. A. Hulcy (left), A. G. A. vice-president, with C. B. Boulet, Milwaukee, and J. F. Farley, chairman, Accounting Employee Relations Committee

countants

L. E. Reynolds (left), chairman, A. G. A. Accounting Section, and A. G. Mitchell, chairman, E. E. I. Accounting Division, shared the spotlight

Accounting Employee Relations Committee. Results of a survey of 42 companies were given by Mr. Farley who pointed out that a sound employee relations policy comes only from painstaking and continuing research within and outside the company.

The rising power of organized labor calls for statesmanship of the highest order, C. B. Boulet, Wisconsin Public Service Corp., Milwaukee, and chairman, E. E. I. Industrial Relations Committee, told the conference. He warned against the accelerating trend toward a socialistic form of government and advised management to devote substantially more thinking and planning to solution of workers' problems. Mr. Boulet's talk is reprinted in this issue of the MONTHLY.

Short and long-term trends in the business outlook were analyzed in an informative address by Sumner H. Slichter, Harvard University. "Although further price increases in some industries are necessary," Professor Slichter asserted, "the immediate business situation calls for improvements in quality and cuts in prices." For the long term, he predicted slow price rises, higher hourly earnings, more output per hour, and a growing share of the national product for employees (paper reprinted in this issue of the MONTHLY).

The opening general session concluded with a report on the effect of the Marshall plan on Europe, by Walker L. Cisler, Detroit Edison Company. While the cold war is being won by the success of this plan, Mr. Cisler expressed concern over the long-term effect of socialistic changes and the nationalization of industries which is in progress.

Starting Tuesday morning and continuing Wednesday a series of parallel meetings on specialized accounting activities and luncheon meetings were featured. A get-together dinner followed by a sparkling entertainment program was held Tuesday evening and a general luncheon brought the conference to a successful close Wednesday afternoon.

Headline speakers at the general luncheon were A. G. A. President Robert W. Hendee, president, Colorado Interstate Gas Co., and Justin R. Whiting, president, The Commonwealth and Southern Corp., New York. Mr. Hendee described the gas industry's PAR Plan which, he noted, "is reaching down to the grass roots and unifying the industry." He praised the work of the accountants and stressed their important role in arousing the country to the dangers of a creeping socialistic trend.

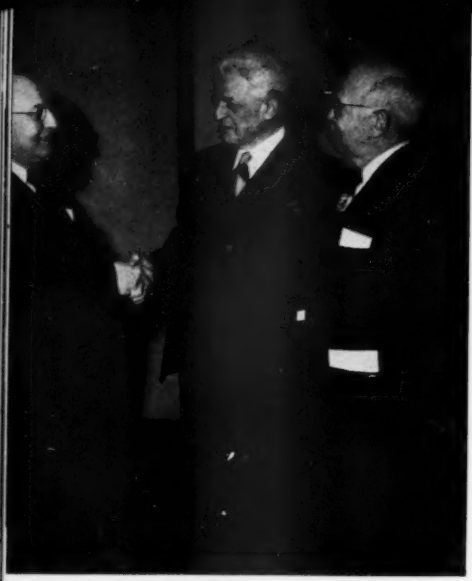
A penetrating discussion of financial and rate-making problems was given by Mr. Whiting who declared that "financing is the urgent problem of the hour." While the ten million investors in this country today profess a belief in the capitalistic system, "the markets indicate that they are not willing to bet large amounts of money on it," he said. "The whole trend of the socialization of industry causes a fear which must be overcome in the sale of securities." He called attention to the shifting of wealth in the United States and urged greater effort to interest employees and small investors in corporation securities.

The General Activities Group opened its series of meetings Tuesday morning with a comprehensive program under the direction of W. H. Zimmer, The Cincinnati Gas & Electric Co., and A. T. Gardner, Delaware Power & Light

Justin R. Whiting, New York, delivered Wednesday talk on subject of sound rates and financing

Robert W. Hendee, A. G. A. president, gave opening remarks at general luncheon on Wednesday

D. C. Gillespie, Charleston, W. Va., reporting on the latest trends in design of bill forms



Conference dignitaries at speakers' luncheon: J. H. Lobban (left), Detroit; Sumner H. Slichter (center), Harvard University; T. E. Hurns, Detroit

Co., Wilmington. The lead-off speaker, H. H. Scaff, Ebasco Services, Inc., New York, presented valuable information on financing and investor relations compiled by the joint A. G. A.-E. E. I. Committee on Financing Utility Capital Requirements of which he is co-chairman.

The fundamental postion of the gas and electric utilities is sound and the future promising, Mr. Scaff reported, but in some companies "the present level of earnings is inadequate to attract needed amounts of equity capital." However, he continued, "earnings will improve generally as new plant goes into operation, price levels stabilize or decrease and adjustments are made in service rates where necessary to attract capital." Only a relatively small percentage increase in revenue on an industrywide basis is required to improve the approximate 25 percent price disadvantage of a utility common stock compared to an industrial stock, Mr. Scaff said.

Further light on the utilities' financial dilemma was thrown by F. W. Brooks, The Cleveland Electric Illuminating Co., who spoke on "How Far Will Your Rate Dollars Stretch?" Pointing out that today's fifty-cent dollar buys virtually the same amount of gas and electricity as pre-war, Mr. Brooks asked "Are there miracles in our business?" His answer was, "No, the results of this condition are just slower in catching up to utilities than to other businesses. We will continue to meet problems of inflated prices long after price trends level or drop."

An accurate appraisal of the regulatory climate necessary to accept inevitable

W. H. Zimmer (left), Cincinnati; A. T. Gardner, coordinator, General Activities Group; F. W. Brooks, Cleveland; J. F. Labanca, chairman, General Accounting Committee, H. H. Scaff, New York; J. P. O'Brien, Cincinnati

"Sacred Cow" luncheon meeting: H. F. Quad (left), Newark, N. J.; J. T. McKay, New Orleans, La.; R. F. McGlone, Cleveland, and F. W. Phelps, St. Louis, co-chairmen; R. B. McCrorey (shown at right), Atlanta, Georgia

"Top brass" at panel discussion on capitalizing various overhead costs. L. E. Reynolds (right), A. G. A. Section chairman, acted as moderator

Materials and Supplies discussion leaders. G. B. Herr (left), Pittsburgh; L. R. Michelsen, A. G. A. chairman, and Carl zur Neiden, Philadelphia

Tuesday General Accounting group which discussed records and responsibility accounting: (Left to right) J. E. Dolan, New York; L. V. Provencher, Detroit, Mich.; A. B. Dilworth, Omaha, Neb.; J. G. Hoffman, Baltimore

Head table at General Activities luncheon: (Left to right) A. T. Gardner, Wilmington, coordinator; Dr. H. B. Dorau, New York; B. S. Rodey, Jr., chairman, A. G. A. Taxation Committee; W. H. Zimmer, E. E. I. vice-chairman

higher rates is needed, Mr. Brooks declared. The greatest difficulty, in his opinion, is to bring about recognition of the devaluation of the dollar in cost type rate bases. He counseled the companies to use their own executives rather than outside experts to present their case.

R. F. McGlone, The East Ohio Gas Co., Cleveland, reported on the work of the A. G. A. Compendium Committee which is reviewing and summarizing for publication all reports and papers of the Accounting Section which have appeared in the A. G. A. MONTHLY, A. G. A. PROCEEDINGS, and in the Proceedings of the National Conference of Electric and Gas Utilities Accountants.

Valuable reports resulting from the joint project on capitalizing various overhead costs were presented by J. P. O'Brien, The Cincinnati Gas & Electric Co., and F. J. LaBanca, New Orleans Public Service, Inc., pinch-hitting for H. L. Dalbeck. The first part covered methods of apportioning administrative and general expense between departments in combination companies and in capitalizing such expenses. Part Two covered the economics of capitalizing the cost of money and a discussion of various bases for capitalizing interest during construction.

Capitalization discussed

With A. G. A. Conference Chairman Reynolds acting as moderator, the remainder of this session was devoted to a lively discussion of capitalization problems by a panel consisting of A. E. Penn, Consolidated Gas Electric Light and Power Co. of Baltimore; E. Toder, Consolidated Telegraph & Electrical Subway Co., New York; H. B. Hardwick, Consumers Power Co., Jackson; A. T. Gardner, Delaware Power and Light Co., Wilmington; and H. P. Taylor, Wisconsin Public Service Corp., Milwaukee.

Principal speaker at the General Activities Group luncheon Tuesday was H. B. Dorau, chairman, Department of Public Utilities, New York University, who discussed current tax developments under the sponsorship of the Taxation Accounting Committee, B. S. Rodey, Jr., Consolidated Edison Co. of New York, Inc., and J. R. Weger, Consolidated Gas Electric Light and Power Co. of Baltimore, co-chairmen.

Mr. Dorau compared the proposed increase in Federal taxes (1) under income taxation at 45 percent and (2) under "excess profits" and income taxation as embodied in the Dingell Bill. In his opinion the first method would raise more money but the excess profits tax would prove highly discriminatory and "would introduce an almost destructive upsetting of the normal regulatory formulas."

General accounting topics were explored at two full sessions Tuesday afternoon and Wednesday morning under the chairmanship of F. J. LaBanca, New Orleans and A. Frazer, West Penn Power Co., who substituted for E. L. Cassady, Indianapolis. The initial presentation at the Tuesday meeting was a detailed report on controlling, filing, preservation and dispostion of records by J. G. Hoffman, Consolidated Gas Electric Light and Power Co. of Baltimore. Covering the experience of one company, it called attention to the inherent benefits of centralized control of records.

Responsibility accounting was thoroughly canvassed by three speakers headed by A. B. Dilworth, Northern Natural Gas Co., Omaha, chairman of the joint committe on this subject. Mr. Dilworth reviewed the activities of the committee and explained that papers to follow would present systems of two utilities which had had satisfactory experience with responsibility accounting. L. C. Provencher, The Detroit Edison Co., gave a complete picture of his company's system and J. E. Dolan, Consolidated Edison Co. of New York, Inc., described New York practice.

An A.G.A.-E.E.I. report covering various types of budgets in use and techniques employed in preparing forecasts was presented by the committee chairman, W. D. Peterson, Minneapolis Gas Company. Among other points, Mr. Peterson stated that the development of financing plans requires a long-term budget and a study of the company's prospective growth and capital expenditures. "A long-term estimate," he said, "will indicate the ability of the company to earn on new capital" and give other vital information.

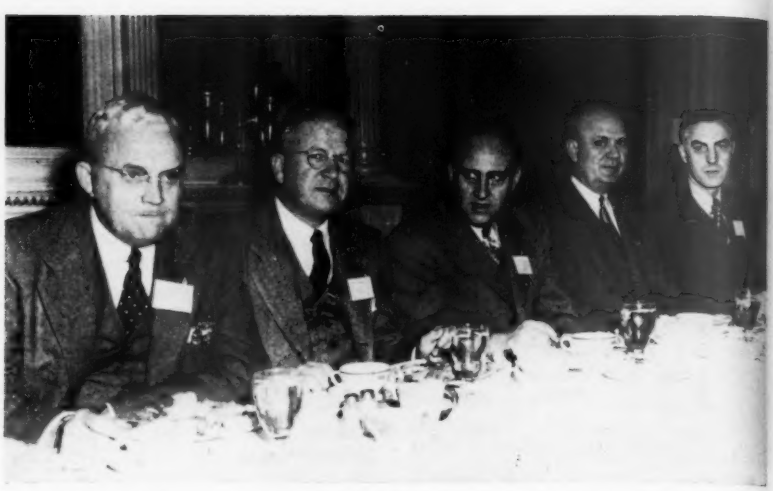
Budgetary control for public utilities under present-day conditions was discussed by Leonard P. Spacek, Arthur Andersen & Co., Chicago, who concluded the Tuesday afternoon general accounting session. Control of costs is exceedingly important today, Mr. Spacek declared, and *(Continued on page 48)*

Tuesday Customer Activities speakers: S. C. Grant (left), Philadelphia; E. W. Smith, Allentown

Customer Accounting Committee chairmen: W. J. Ott (left), E. E. I., and A. G. Burnett, A. G. A.

Customer Accounting officers who presided on Tuesday morning: P. E. Ewers (left), A. G. A. coordinator; R. G. Schneider, E. E. I. chairman

Nashville meetings crowded



Head table at formal luncheon on April 5 included: (Left to right) Lipscomb Davis, Nashville, guest speaker; B. T. Franck, chairman, A. G. A. Industrial and Commercial Gas Section; W. H. Ligon, Nashville; D. W. Reeves, vice-chairman, Industrial and Commercial Gas Section; Terry Hart, Nashville

A total of 42 speakers in Nashville, Tenn., April 5-7 presented the largest and most varied array of subjects ever given at an A. G. A. Sales Conference on Industrial and Commercial Gas. Nearly 200 delegates from 27 states and Canada proved an enthusiastic audience for the three-day meetings.

The conference opened with a special commercial gas day and ended with a similar session for industrial gas, while a general session on the morning of April 6 was followed by concurrent symposiums that afternoon. All the sessions were packed with talks on pertinent gas industry topics prepared by the program committee under chairmanship of L. E. Biemiller, Consolidated Gas Electric Light and Power Co. of Baltimore.

As an example of the varied program, one subject alone, "Diversified Commercial Sales," included descriptions of seven different applications of gas by as many experts.

Prominent local authorities served as guest speakers at the two formal luncheons. At one affair, Lipscomb Davis, president, Davis Cabinet Co., Nashville, outlined the principles which have "made America great."

"It is up to each individual," he declared, "to take a more active part in community affairs so that these principles will not be over-shadowed by the quest for material wealth and security.

"The time has come for us to exert our determination," Mr. Davis said, "and to take a stand to uphold the philosophy that led our ancestors to make America the greatest nation in the world."

D. A. Hulcy, president, Lone Star Gas Co., Dallas, and vice-president of A. G. A., gave an inspiring address at the general session, entitled "The Eyes of Main Street Are Upon You." He urged representatives of the utility industry to create a favorable attitude toward gas companies "by showing our customers, our employees, and the citizenship of our community that we have a modern, up-to-date product and service for sale and that we can sell it!" (Mr. Hulcy's paper is reprinted on page 2 of this issue of the MONTHLY.)

Sales aspects of the conference were ably set forth by Robert C. Wayne, Surface Combustion Corp., Toledo, who spoke on economics, and by Milton J. Firey, manager, Congress Hotel, Baltimore. Mr. Firey discussed the funda-

J. Stanford Setchell (left), A. G. A., spoke on sizing hot water heaters; Harry B. Wilson (second from left), Brooklyn, and E. E. Magnuson (right), Rockford, discussed storageless water heating. Second from right is Frank H. Trembly, Jr., chairman, Subcommittee on Commercial Equipment Tests

G. R. Van Kempen (left), spoke on application of gas as an aid in speeding production in textile and paper mills; Wallace Herdlein (center) presented a comparison of various fuels for industrial ovens, and W. F. Barstow discussed subject of gas atmospheres in paint, varnish and chemical industries

A featured address at the conference was given by Milton J. Firey, shown above demonstrating effectiveness of low-cost visual selling aids

Important trends in school kitchens were discussed at the conference by Irene Burba, Nashville. Miss Burba (center) is shown discussing points in her talk with James V. Hall (left), Hammond, Ind. and chairman, A. G. A. Food Service Equipment Committee, and Russell Brisby (right), Nashville

mentals of selling, using demonstrations to illustrate his points on visual sales aids.

Cecil Sims, a local attorney and former member of the legislature, made an earnest plea for state responsibility. "The time has come," he said, "to forget state rights and to adopt the overshadowing concept of state responsibility."

Mr. Sims added that many states are making the false assumption that if an economic problem is too large for a state to handle, it automatically becomes a federal problem. He cited the Port of New York Authority as an example of how two cooperating states can assume a project of gigantic proportions.

A surprise speaker at the dinner in the Andrew Jackson Hotel was Vice-Chancellor Madison Sarratt of Vanderbilt University, who gave a short address on "The Place of Education in the Modern World." He observed that, "the business of education and industry must be foremost in making democracy work in these United States."

Mr. Sarratt pointed out that there is a great gap between power and the intelligent use of power in all its forms. "While we've produced much of our physical well-being, little has been done," he said, "to aid our understanding, which includes the bettering of human relations in all fields."

With the conference over, plans are being completed for the A. G. A. Combined Commercial Equipment Exhibit at the National Restaurant Exposition in Atlantic City, May 24-27.

Charles H. Barnett (left), speaker on modern core baking ovens, congratulating J. D. Keller on his paper and discussion of radiant gas burners

Another important subject on the industrial symposium was galvanizing by gas, under the leadership of A. M. Thurston (standing), Cleveland. Assisting was the panel shown above: (Left to right) E. J. Funk, Jr., Baltimore; Hale A. Clark, Detroit; Paul R. Dreyer, Chicago, and E. B. Freeman, Muncie

One of the subjects arousing great interest at a commercial symposium was "Selling Is Still Important." James V. Hall (standing), chairman, Food Service Equipment Committee was assisted by J. R. Delaney (left), Cincinnati; E. V. Fineran, Washington, D. C., and J. D. Haverkamp, New Orleans

Mid-West program productive

Numerous opportunities for salesmen of the gas industry to capitalize on market trends and strengthen local and national activities were presented to more than 450 delegates at the eighteenth Mid-West Regional Gas Sales Conference at the Edgewater Beach Hotel in Chicago, March 28-30. The meeting was sponsored again by the Residential Gas Section, American Gas Association, and was generally conceded to be the most productive to date.

In his welcoming address W. L. Hayes, general sales manager, Montana-Dakota Utilities Company, chairman of the Mid-West Regional Gas Sales Council, pointed out the vital necessity of mustering a trained force of "door-bell ringers and house-to-house canvassers." Stressing the inroads being made in the home markets by competitive forces, Mr. Hayes urged gas utility companies to build up and train sales forces in excess of their prewar strength. Great opportunities are ahead for the industry, and companies that profit through these opportunities will be those utilities that return to the tried and proved selling methods, he said.

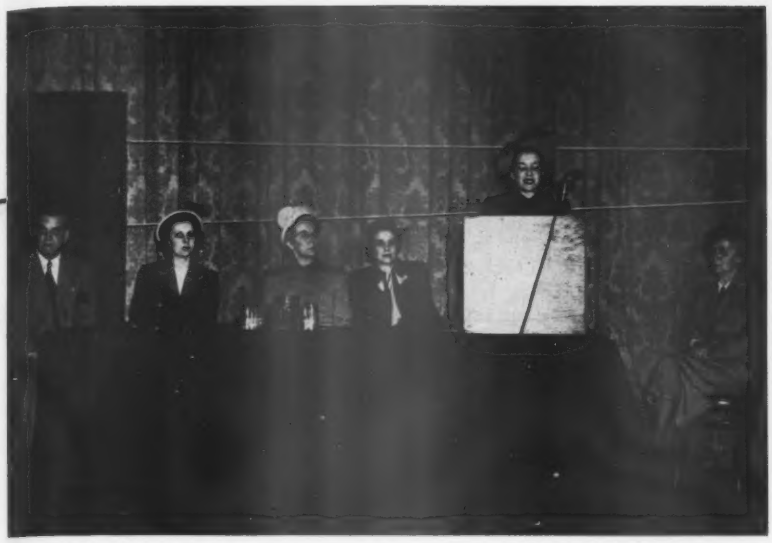
The closing message of the conference, a dramatic appeal to members of the council to do everything possible as citizens to keep the nation from drifting unwittingly into economic slavery, was delivered by Dr. Kenneth McFarland, superintendent of schools, Topeka, Kansas. Dr. McFarland disclosed that the trend toward permitting incompetent bureaucracies to take over social and economic regulation of citizens could easily progress to the point where the United States would become a completely socialized nation.

Greetings from the American Gas Association were presented by F. W. Williams, secretary, Residential Gas Section, representing H. Carl Wolf, A. G. A. managing director. Mr. Williams brought the delegates a vivid picture of Association activities, outlining many of the promotional, advertising and research programs being carried on under the gas industry's coordinated PAR plan, now in its fifth successful year. He informed the conference of the two-year program now being launched by the A. G. A. Residential Gas Section under which proposed activities can be coordinated with advertising and promotion plans of the industry well in advance so as to achieve the greatest cumulative effect.

One of the specific promotional events, The Court of Flame program, jointly sponsored by A. G. A. and Gas Appliance Manufacturers Association, was spectacularly presented by Stanley C. Gorman, sales promotion director of the G.A.M.A. Water Heater Division. Supported by unique stage effects, Mr. Gorman outlined the integrated drive being staged by A. G. A., G.A.M.A., gas utility companies, gas water heater manufacturers and dealers throughout the nation to increase the sale of automatic gas water heaters during the coming year. Naming the automatic gas water heater as the "Cinderella" of the gas appliance family, the speaker dramatically forecast a bright future for that branch of the appliance industry.

Dr. Clark G. Kuebler, president, Ripon College, Wisc., an outstanding authority on ancient and modern law and governments, traced the historic parallel between the transition of ancient and modern countries from democracies to totalitarian states. Despite the popular belief that "it can't happen here," Dr. Kuebler proved that many of the initial steps in such a transformation are presented to the public under the guise of social improvements. He emphasized the importance of serious

Officers who played important roles in Mid-West Regional Gas Sales Conference: (Left to right) W. L. Hayes, Minneapolis, council chairman; Raymond J. Vandagriff, St. Louis, Mo., assistant chairman; B. H. Wittmann, Chicago, and J. E. Walsh, Omaha, who presided at two sessions



Harriette M. Lundberg (standing), Muskegon, Mich., and Mary N. Hall (right), Elizabeth, N. J., were assisted by a panel of experts in their discussion of home service and the gas laundry dryer

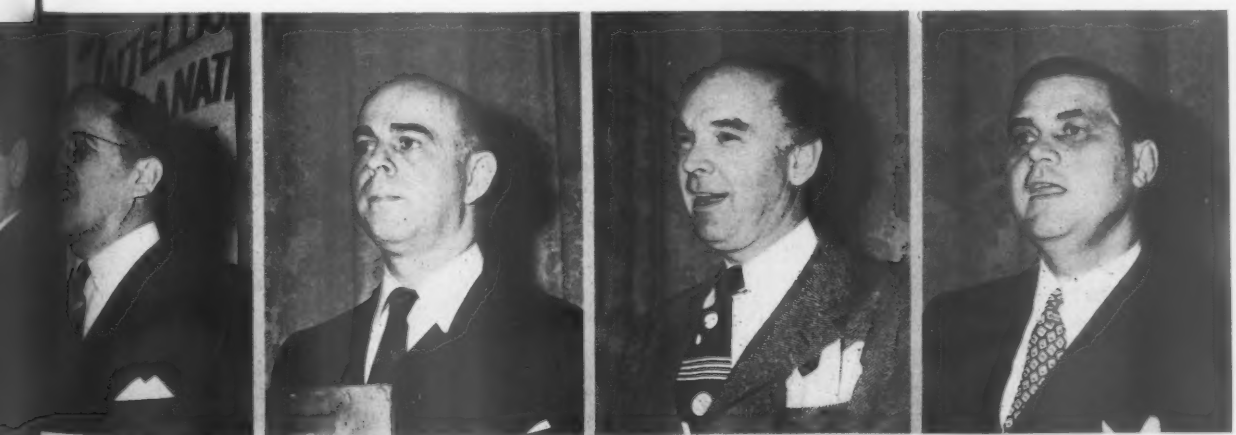
The automatic gas water heater was represented as the "Cinderella" of the gas appliance family

interest in governmental affairs on the part of every citizen in the nation to avoid many of the dangers inherent in today's confused world.

C. C. Young, research engineer, The Gas Service Co., Kansas City, Mo., told of experimental work now completed on the combination gas and oil burner as an aid in meeting peak load demands. Governed by outside thermostats, that can be set to shift from gas to oil, when peak demands for gas are the heaviest, the combination burner has proved to be a valuable standby in many places where it has been experimentally installed.

Louis Ruthenburg, president, Servel, Inc., brought the conference an inspiring picture of opportunities ahead for gas utility salesmen. The rapid expansion of natural gas pipeline systems, increasing adoption by manufactured and mixed gas companies of new economical gas-making processes developed under the industry's coordinated Promotion, Advertising and Research Plan, present a bright future for the gas utilities in withstanding and reducing competition, Mr. Ruthenburg declared. He charted proposed advances of the natural gas branch of the industry into areas presently troubled by installation restrictions, and urged utility companies to strengthen their present position in home markets through sales of newer uses for gas, such as summer-winter air conditioning, gas laundry drying and gas incineration. These uses tend to fill present valleys and to level off seasonal peaks.

Insurance companies and gas utilities are alike in their ultimate aim of providing comfort and security to customers, Henry W. Persons, The Mutual Life Insurance Co., told the conference. The basic points of salesmenship in both industries are similar, he declared. Pointing out that a life insurance policy, in itself, is only an intangible paper that represents future security and comfort for families, he *(Continued on page 56)*



Four of the principal speakers who discussed different aspects of sales activities at the A. G. A. Mid-West Regional Gas Sales Conference: (Left to right) Carl V. Haecker, Chicago; Dr. Clark G. Kuebler, Ripon, Wisc.; Dr. Kenneth McFarland, Topeka, Kan., and Henry W. Persons, Chicago

Jacob D. von Maur celebration shows progress industry has made in past 25 years

Record interest at Cincinnati

W. R. FRASER, *CHAIRMAN* · ERNEST G. CAMPBELL, *VICE-CHAIRMAN*

Record interest by a record attendance featured sessions of the Jacob D. von Maur silver anniversary Distribution, Motor Vehicle and Corrosion Conference in Cincinnati, April 4-6. Approximately 800 delegates from the United States and Canada gave convincing proof that technical men of the gas industry are alert to today's problems and already heavily engaged in preparing for the future.

Rapid growth of the American Gas Association's distribution conferences since the first meeting organized 25 years ago by Mr. von Maur, was described by J. M. Pickford, Northern Indiana Public Service Co., and current chairman of the Distribution Committee. This year's new high attendance, together with the "give-and-take" at informal sessions, shows that the distribution end of the gas industry is in good hands, Mr. Pickford declared.

Presentation of an engraved plaque to Mr. von Maur highlighted the opening day's meetings. A special subcommittee composed of H. B. Andersen, The Philadelphia Gas Works Co., as chairman; C. S. Goldsmith, The Brooklyn Union Gas Co., and F. A. Lydecker, Public Service Electric & Gas Co., outlined major steps in the guest of honor's career, at the same time bringing into sharp focus the extensive technical progress made by the industry during the past quarter century. E. J. Tucker, vice-president and general manager, Consumers Gas Co. of Toronto and a director of A. G. A., remarked that Mr. von Maur has earned the respect of friends throughout the industry.

During his acceptance speech, Mr.

Checking last-minute details of conference program in Cincinnati: (Left to right) A. W. Johnston, Jr., vice-chairman, A. G. A. Distribution Committee; J. M. Pickford, chairman, Distribution Committee, and presiding officer at general sessions; W. R. Fraser, chairman, A. G. A. Technical Section

Jacob D. von Maur (right) examining silver tray which he received from members of the Technical Section, with W. E. Kemen (left), Milwaukee, and H. P. Boncher (center), Bradford, Pennsylvania

* Copies of papers marked by asterisk are available at 25 cents each from secretary, Technical Section, American Gas Association, 420 Lexington Avenue, New York 17, N. Y. A special compilation of the Subcommittee on Construction and Maintenance "Methods, Materials and Machines," is available at 50 cents a copy.

Motor Vehicle luncheon conference: (Left to right) H. C. Verock, New York; Linn Edsall, E. E. I. chairman; F. M. Rudman, Detroit, A. G. A. chairman; F. G. Shoemaker, Detroit; James L. Coyne, Rochester, A. G. A. vice-chairman

Corrosion luncheon: M. J. Pfeiffer (left), Cincinnati; R. F. Hadley, Philadelphia; P. H. Miller, Shreveport, vice-chairman; Sidney E. Trouard, New Orleans, chairman; A. D. Simpson, Jr., Houston; M. C. Miller, New York

Meters and Metering luncheon: Russell A. Seifert (left), Cincinnati; William Berger, New York; George K. Bachmann, vice-chairman; R. J. Ott, Philadelphia, chairman; G. E. Griffin, Brooklyn, and Elmer Becker, Indianapolis

Construction and Maintenance luncheon conference: James A. Whelpley (left), Cincinnati, vice-chairman; F. J. Hall, Detroit, chairman; J. M. Pickford, A. W. Johnston, Jr., chairman and vice-chairman, Distribution

Head table at Distribution Design and Development luncheon conference: (Left to right) W. P. Dick, Columbus; G. A. S. Cooper, Newark, N. J.; V. F. Bittner, Chicago, chairman, and Calvin A. Brown, Rochester

Work on Consumers' Premises luncheon: (Left to right) R. H. Bussard, Washington, D. C.; C. S. Hazel, Philadelphia; J. G. White, Chicago; R. B. Barger, chairman; J. M. McCaleb, vice-chairman, and W. H. Weber, Brooklyn

von Maur, who is now a consultant for Consumers Gas Co. of Toronto, attributed a major portion of his success over the years to an inquisitive approach. "I never once hesitated to ask questions," he remarked.

Four general sessions opening on Monday morning and winding up on Wednesday afternoon were presided over by Mr. Pickford and included a brilliant array of important speakers. Fast-moving corrosion and motor vehicle conferences, together with numerous "audience participation" luncheon meetings of technical committees, comprised the major sessions. Delegates also took advantage of the opportunity offered by the Subcommittee on Construction and Maintenance to view the largest demonstration of trenching equipment ever shown in one spot. Special showings were held Sunday afternoon and again on Thursday morning.

On the opening day, W. C. Beckjord, president, The Cincinnati Gas & Electric Co., declared that the distribution meetings help to sharpen the thinking of technical men and provide delegates a priceless opportunity to gain breadth of experience in a short time.

He characterized the current expansion of the utility industry as a great phenomenon of the present day. The results clearly show, he added, that the gas business is gaining in progress right along.

The economy and application of diesel engines was described with the help of lantern slides by F. Glen Shoemaker, chief engineer, Detroit Diesel Engine Division, General Motors Corporation. The symmetry of this type of engine means, he said, that it can be used for an infinite variety of jobs.

What is the importance of changes in American labor relations; how have these changes developed, and how do they affect the utilities? These and other vital questions were answered in lucid manner by an expert on the subject, Dr. Leo Wolman, professor of economics at Columbia University.

Labor relations in the United States have been revolutionized during the past ten years, he declared, with the creation of the greatest organized group in the community in the country's history. The trade union movement now embraces 14-15 million persons—a huge force for good or evil.

These tremendous changes have narrowed the area of competition in industry, Mr. Wolman declared, by removing labor, the largest single item of cost, from competition. At the same time, there has begun a transfer of authority from management to somebody else. This change will make a great difference in the development of new industries in the U. S.

"In England and Russia the biggest problem today is how to get management. Now we are undermining the initiative of our management."

"The next big job for industry," he added, "is to get back in touch with the people on its payrolls."

A growing need for imaginative thinking in accident prevention work was stressed in a dramatic presentation at the Tuesday morning general session. L. K.

Richey, vice-president and manager of operations, Michigan Consolidated Gas Co., showed through use of slides that accident hazards must be recognized and surrounded with adequate safeguards.

Management cannot afford to turn its back on this problem, he declared. Management cannot criticize its employees unless it has provided them with adequate safeguards against accidents.

Automatic controlling of district regulator stations for heavy house heating was discussed at length by Russell H. Freeman,* gas distribution engineer, Public Service Co. of Colorado. Using slides, Mr. Freeman outlined two types of systems employed by his company which conform to the following principles:

(1) Extensive use of two-inch distribution mains for economy, (2) house regulators installed ahead of meters on all services to permit fluctuating pressures in the mains far beyond pressures used on appliances, and (3) system pressure varied in proportion to load demand and kept at the lowest possible average in order to minimize leakage and other operating problems.

Motor Vehicle chairmen, F. M. Rudman (left), Detroit, A. G. A., and Linn Edsall, E. E. I., discussing conference highlights with Sidney E. Trouard, New Orleans, chairman, A. G. A. Corrosion Committee

The gas industry is trying to decrease the cost of servicing automatic appliances through cooperation with A.G.A. in a six-point program which was described by W. C. Peters, Northern States Power Co., St. Paul, Minn., and George B. Johnson, Minneapolis Gas Co., Minneapolis.* Main points in this program, the speakers stated, apply to: (1) improvement of personnel selection, (2) servicemen's training schools, (3) service manuals, (4) utilization research, (5) appliance requirements, and (6) conditioning of gas.

A seventh point which should be added, they declared, is simplification of adjustment parts and increased accessibility. The switch from non-automatic to automatic appliances increases the cost of service calls to the gas company approximately 2.7 times. Thus the big job is to decrease the cost of maintaining automatic appliances. The joint presentation used a film and accompanying script to dramatize some of the complex and inaccessible situations which confront servicemen.

An interesting progress report on demand metering was presented by G. E. Griffin,* The Brooklyn Union Gas Co., based on replies from a recent survey. It appears, he said, that a demand meter will have to meet the following requirements in order to qualify for present day needs:

Accuracy, ease of installation and servicing, data that can be tabulated easily, and use of an instrument that provides a dependable record. (Mr. Griffin's paper is reprinted in this issue of the MONTHLY.)

Current practices illustrating standardization of service and riser were discussed in detail by Peter G. Bruck,* superintendent, central district shop, The Peoples Gas Light & Coke Co., Chicago. It is apparent from a study of replies to a questionnaire, he remarked, that a fair degree of uniformity already is in effect in the industry, and just how much more can be obtained is questionable.

Results from another questionnaire on trends in customer service were presented by J. M. McCaleb,* customer service superintendent, Citizens Gas and Coke Utility, Indianapolis. Based on replies from 50 utilities, a trend is apparent, he stated, away from "free servicing." It is also apparent, he added, that most companies are contemplating changes in policy in connection with the home heating problem. For the purpose of the survey, "customer service" was defined as "the type of work on the consumers' premises such as adjusting ranges, refrigerators, water heaters, house heating equipment, and others."

On Wednesday morning, W. J. Menet,* assistant superintendent of meter shop, The Peoples Gas Light & Coke Co., reported that in his company the changeover from a straight manufactured gas to a mixed gas has been very advantageous in connection with meter proof and performance. His talk on the "Effect on Meters of the Use of Natural Mixtures in the Gas Production Plant" emphasized the necessity for becoming familiar with company practices for a period preceding the changeover from straight manufactured gas.

Diaphragm repairs have been reduced in his company, he said, from 22.6 percent of the meters repaired in 1930 to approximately one percent in recent years. This decrease is attributable largely to the following factors:

(1) Comparative absence of troublesome materials in mixed gas.

(2) Presence of a relatively constant degree of saturation of water vapor.

(3) A comprehensive meter repair program designed to take advantage of the useful life of the diaphragm but not so liberal as to extend into a critical range.

The average gas distribution engineer does not yet possess the necessary knowledge to successfully solve corrosion problems, according to A. D. Simpson, Jr.,* chief engineer, United Gas Corp., Houston. The speaker related in a general way the magnitude of corrosion leak experience on United Gas city distribution systems and his company's experience with cathodic protection. The subject of cathodic protection and the huge annual wastes due to corrosion was explored still further at a corrosion conference on Tuesday morning and at luncheon meetings.

Gas conditioning as it pertains to oil fogging, humidification, use of Carboseal or equivalent materials, and use of dust traps, was covered by Michael Anuskiewicz, Jr.,* engineer of development and planning, The Brooklyn Union Gas Company.

"For those companies anticipating the use of natural gas, gas conditioning—such as oil fog- *(Continued on page 32)*

Informal get-together: E. J. Tucker (left), Toronto; C. S. Goldsmith, Brooklyn; Louis A. Evarts, Garden City, N. Y., and W. A. Fitzsimmons, New Haven

Committee members and manufacturer representatives who participated in unusual panel on hot applied coatings, a feature of the Corrosion meetings

(Left to right) A. H. Cramer, Detroit; A. D. Simpson, Jr., Houston, general session speaker; A. H. Bumpus, Jackson, Miss.; C. L. Morgan, Houston

M. C. Alves (left), St. Louis, Mo.; Jefferson Wells, Birmingham; Jean Y. Ray, Richmond; J. W. Lane, New York; W. H. Head, Manchester, New Hampshire

A portion of the large-scale exhibit of mechanical trenching equipment

Conference delegates getting a close look at trenching machine in action

Jacob D. von Maur (first row, center) with part of Canadian delegation and P. L. Schereschewsky (seated, right), representing French Gas Association

Norman P. Peifer (left), Pittsburgh; A. V. Brashear, Detroit; L. K. Richey, Detroit, who gave accident prevention talk

General session speakers: J. M. McCaleb (left), Indianapolis; P. G. Bruck, Chicago, Illinois

G. B. Johnson (left), Minneapolis, and W. C. Peters, St. Paul, examining colored film illustrating simplification of gas appliances

Record interest at Cincinnati

(Continued from page 30)

ging or humidification—is a phase of major importance which cannot be ignored or left for development at some future date," the speaker declared.

Although local situations determine the conditioning required, he suggested that over-condition is preferable to under-condition. "Insufficient initial treatment may well result in costly expenditures to eliminate leaks which are beyond treatment, and in excessive service calls due to dust."

A discussion by John MacLarty,* supervisor of training, Rochester Gas & Electric Corp., showed steps being taken to improve "Service Training—The Orphan."

"A recent limited questionnaire revealed almost unanimous support for the idea of A. G. A. sponsored leadership in service training," he remarked. Formal representation for action along this line is being planned with the appropriate groups.

"We are paying for training whether we usher it in or not," he declared. "These costs are camouflaged in excess labor costs, overtime call back and customer reaction. Training permits consolidation of these costs under one account."

Southern California Gas Company's successful experiences with a comprehensive training program for street department employees were described by H. M. Dwight,* supervising engineer of that utility. (This paper was reprinted on page 9 of the April 1949 MONTHLY.)

As the concluding speaker on Wednesday morning, R. B. Allen,* assistant to superintendent of distribution plant, Michigan Consolidated Gas Co., reported favorable experience with lightweight service trenchers. His points were illustrated by a showing of the color film, "Mechanical Installation of Gas Services" depicting trenchers and crews at work in the Detroit area.

On Wednesday afternoon the general session opened with a discussion of servicing of "wrinkles" by J. J. Gagen, superintendent of service bureau, Consolidated Edison Co. of New York, Inc., followed by the showing of a composite film. Arrangements for showing the film were made by the Subcommittee on Construction and Maintenance, F. J. Hall, chairman.

The A. G. A. Motor Vehicle group, F. M. Rudman, Michigan Consolidated Gas Co., chairman, teamed up with the Edison Electric Institute transportation group, beginning Monday noon, and held what was considered a stimulating conference.

The Monday luncheon conference under the chairmanship of Mr. Rudman featured "Motor Vehicle Maintenance Records" capably handled by a panel composed of R. O. Babcock, Consolidated Edison Co. of New York, Inc.; H. J. Chambers, Oklahoma Natural Gas Co., Tulsa; W. H. Head, Public Service Co. of New Hampshire, and P. W. Rogers, The Ohio Fuel Gas Company. Other topics discussed were methods and equipment for soil compaction, housing for shops and vehicles, allied cold weather starting problems, and methods of de-sludging motors.

On Tuesday morning, a Motor Vehicle conference symposium conducted by P. W. Rogers, The Ohio Fuel Gas Co., featured "New Developments of Tools and Equipment" by J. T. Callaway, Goodyear Tire & Rubber Co., and also "Results of Good Maintenance" by Ralph Kress, specification engineer, Chevrolet Motors Division, General Motors Corporation. Other topics dicussed were: generator and battery equipment for radio-equipped vehicles and location of radios in vehicle bodies, heaters for cabs and crew compartments, undercoating materials—application and economics.

Linn Edsall, Philadelphia Electric Co., chairman, E.E.I. Transportation Committee, presided at the afternoon luncheon conference which featured "Developments and Principle of the Torque Converter" by Oliver K. Kelley, engineer, General Motors Corporation. Mr. Kelley opened many eyes to the rapid advancement of the automotive industry, and gave an insight into the complex mechanisms which are constantly being developed. Other topics included: experience with tower trucks on general line work and aerial cable installation, brakes on pole and tool trailers, power-driven earth augers of the detachable type for pole hole boring.

Motor Vehicle program

Wednesday morning was devoted to the "Development and Application of Lubricating Oils" presented by Jack Lane,* engineer, Socony-Vacuum Oil Company. Mr. Lane briefed his paper, and in down-to-earth fashion answered questions which have been bothering many of the fleet operators for years. W. H. Head, Public Service Co. of New Hampshire, presided. The agenda covered gasoline engine powered Jack Hammers and concrete breakers; low-pressure type tires, puncture-sealing tubes and the elimination of spare tires; positive crank case ventilation; radiators, overflow tanks and permanent antifreeze.

The Motor Vehicle conference wound up with a luncheon meeting featuring "Methods for Improving Safe Handling of Motor Vehicles" by E. W. Jahn, superintendent transportation, Consolidated Gas Electric Light & Power Co. of Baltimore. J. L. Coyne, vice-chairman, A. G. A. Motor Vehicle Committee, presided.

Unusually large attendances were present at the luncheon and morning conferences sponsored by the Corrosion Committee, *(Continued on page 42)*

Appliance standards simplified

Modification and simplification of requirements for gas appliances under the American Gas Association Laboratories approval plan advanced another step recently with the adoption of extensive revisions to a number of American standards. These revisions, adopted by the Approval Requirements Committee at the March 15 meeting, affect mainly domestic gas ranges, water heaters, room heaters, hot plates, and laundry stoves, gas hose for portable appliances and gas valves. Revisions become effective January 1, 1950.

Specific requirements covering the certification of gas appliances for use with liquefied petroleum gas-air mixtures were established for the first time. They apply to gas ranges, water heaters, room heaters and hot plates and laundry stoves. Pending establishment of similar requirements for other types of gas-fired appliances, certification may be extended to them also for use with LP gas-air mixtures on the same basis as set up for the specific appliances covered in the new requirements.

Under the new standards, use of two test gases are specified. These are known as Gas F and Gas G. Satisfactory performance on both is required although a change in main burners and pilot burners as well as readjustment of orifice and primary air settings for each test gas is permitted. Gas F is a 525 B.t.u. butane-air mixture of 1.16 specific gravity. Gas G is a 1,400 B.t.u. butane-air mixture of 1.42 specific gravity. Choice of burners to be used on equipment utilizing intermediate heating value mixtures is left to the option of the manufacturer. Thus he may employ his field experience with different LP-gas-air mixtures to best advantage.

The revised water heater requirements are devoted principally to simplification and revision of the old text. New addenda to existing gas range requirements clarify the wash-boiler test procedure. They also permit the approval of ranges incorporating single-point ignition systems and modify requirements for the use of non-ferrous metals for top burners, requiring metals of greater durability. Similar wash boiler and top burner provisions were incorporated into the hot plate and laundry stove requirements.

Revisions made in current space heater requirements provide for changing their title. The term "room heaters" is considered more appropriate to the function they perform and avoids confusion with newer types of equipment appearing on the market. A room heater is defined as:

A self-contained, free standing, nonrecessed, (except as noted below), gas-burning, air heating appliance intended for other than major domestic heating. This shall not include air heating appliances covered by other American Standard Approval or Listing Requirements. A room heater may be of the vented or unvented type, except that unvented room heaters shall not have a normal input rating in excess of 50,000 B.t.u. per hour. (Note: This classification shall also include unvented *open flame radiant* type wall heaters.)

Requirements for flexible gas tubing were extensively revised and will be known in the future as "Listing Requirements on Gas Hose for Portable Gas Appliances." This title was adopted to avoid confusion with connectors of flexible metal tubing and connectors of semi-rigid tubing which are tested under separate requirements.

Addenda were also adopted to current standards for gas valves. These cover recommended dimensional specifications for boundary and fitting points intended to promote standardization and uniformity along the standard lines of each manufacturer and yet permit the manufacture of special types. The new features are designed to promote interchangeability and eliminate confusion.

A number of other important actions were taken by the Approval Requirements Committee for the purpose of improving various standard procedures and streamlining the functioning of subcommittees. *(Continued on page 43)*

Approval Requirements Committee at the A. G. A. Testing Laboratories on March 15. C. H. Waring, The Gas Service Co., Kansas City, Kan. is chairman

Industry news

I.G.T. to present home study course

ACCOMPANIED by a message expressing his deepest regret, Dean Frank T. Stockton has announced the discontinuance of the home study course on natural gas that has been conducted for more than 15 years under the auspices of the University of Kansas. Students who have enrolled recently will continue their work and the conclusion of all correspondence study activity probably will require another year. Ever-increasing demands on the time and efforts of faculty members in carrying out the regular university curriculum was a major reason for discontinuing the home study course.

The Personnel Committee of the American Gas Association, aware of the need for this type of educational opportunity for men who cannot attend schools, has arranged with the Institute of Gas Technology in Chicago, to conduct a course similar to the University of Kansas course. Preparation of text and lesson material is well advanced and the new course should be open to enrollment in about six months.

Plans for a natural gas home study course similar to the manufactured gas course being conducted by Columbia University under A.G.A. sponsorship, were initiated in the early 1930's. Major T. J. Strickler of Kansas City, former president of A.G.A. recommended the University of Kansas as having a qualified staff.

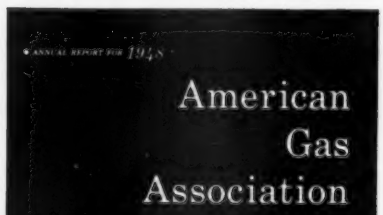
The advisory committee supervising conduct of the course consisted of the late F. L. Chase, vice-president, Lone Star Gas Co.; J. D. Creveling, then of Henry L. Doherty & Company; Dr. J. B. Garnet, Home and affiliated natural gas companies, and the late A. B. Macbeth, president, Southern California Gas Company and a former president of A.G.A.

Altogether there have been 874 enrollments with 262 completions from 29 states. In addition, there have been students from Ontario, Alberta, New Brunswick and from Netherlands West Indies and Mexico.

The Institute of Gas Technology will present its home study courses under the auspices of A.G.A. and under the general supervision of an advisory committee consisting of A.G.A. members and Institute of Gas Technology trustees. Present plans call for three courses; one on natural gas including transmission, one on manufactured gas, and a third on distribution and utilization. Every effort will be made to present the subject matter of each home study course in a clear, concise manner so that non-engineering graduates will have no difficulty in following the lessons. Cadet engineers should more easily become acquainted with the broad nature and problems of the industry and more experienced personnel should benefit by increasing the breadth of their information and by reviewing ground previously covered.

The natural gas home study course will present the organization of a transmission and distributing natural gas company; a discussion of the physical and chemical properties of natural gases and natural gas components; geological and engineering aspects of production; conditioning of natural gas with recovery of liquefiable products; compression, transmission and metering; storage for seasonable loads and fundamental market considerations.

Annual reports tell gas industry gains



Mailed early last month to members, this 28-page A. G. A. annual report gives a colorful, pictorial account of the Association's comprehensive industry-wide programs of research, advertising, promotion, and other activities

● **The Brooklyn Union Gas Company**—Clifford E. Paige, president and chairman of the board, in the 1948 annual report, stated that gas sales and revenues for the year were the highest in the company's history.

Mr. Paige attributed the record-breaking volume of gas sales in part to extreme cold weather and the shortage of other fuels during the early part of 1948, but added that the increase in general reflected a steady and encouraging load growth in the residential, commercial and industrial classifications. More than 35 billion cubic feet of gas were sold during the year, an increase of about two billion cubic feet over 1947.

Public interest in new gas appliances accounted for a record appliance sales volume of more than $5 million, despite restrictions on the sale of space heating equipment.

Joining with other companies in the New York area, The Brooklyn Union Gas Company has contracted with Transcontinental Gas Pipe Line Corporation to purchase natural gas when that company completes its pipeline.

"This fact means," Mr. Paige said, "that Brooklyn Union is assured for years to come of a valuable raw material that should materially reduce and stabilize operating costs."

● **The Connecticut Light & Power Co.**—R. H. Knowlton, president, reported in the company's 1948 annual report that gas sales totaled 7,359,244,000 cubic feet during 1948, an increase of 3.8 percent over 1947. Average gas sales per household customer reached 35,331 cubic feet, an increase of 4.7 percent over the previous year.

The report disclosed that the company is closely following developments connected with the proposed extension of natural gas into New England.

● **Texas Eastern Transmission Corp.**—R. H. Hargrove, president, reported in its 1948 annual report that as a result of liquid removal and cleaning programs, operating efficiency of the company's pipelines were increased from approximately 67 percent in May 1947 to approximately 89 percent at the end of 1948.

With one exception, the company operationally completed its revised expansion program designed to provide a delivery capacity of 508 million cubic feet daily by December 31, 1948. An additional expansion program is expected to increase delivery capacity of the system to 740 million cubic feet daily.

● **Delaware Power & Light Co.**—Gas sales during 1948 rose from 2,413,410,000 to 2,653,589,000 cubic feet according to Stuart Cooper, president and chairman of executive committee. Gas revenues increased from $2,175,552 to $2,885,980.

East Ohio releases natural gas film

THE EAST OHIO GAS COMPANY'S new motion picture film "Our Silent Partner," has just been released and is now available for showing before schools, service and luncheon clubs, fraternal organizations, and other groups.

Produced in color and sound, the film tells the story of natural gas from the planning and drilling of gas wells to its use for homes and industry.

Almost a year in preparation with numerous scenes taken in Ohio, West Virginia and Texas, the film has been boiled down to run 27 minutes. It was produced by Robert Yarnell Richie Productions, Inc., New York. The gas company's advertising agency, Ketchum, MacLeod and Grove, Inc., aided in general planning of the picture.

Industrial and Commercial Hall of Flame greets new men

Good-fellowship dinner of A. G. A. Industrial and Commercial Hall of Flame in Nashville last month to honor new members. Herman G. Gehnrich, Woodside, L. I.; Robert B. Grossman, Los Angeles; S. Procter Rodgers, Baltimore, and Carl Wierum, Brooklyn, qualified for membership during past year through their contributions to Section activities. C. W. Berghorn, retired, former secretary of the Section, was also made a member

Six awards to honor top achievement

OUTSTANDING CONTRIBUTIONS to different branches of the gas industry in 1948 will be honored again this year by six major awards. Association members are urged to seriously consider for immediate nomination any employee who can qualify under one of the award classifications.

Individual achievement and leadership during 1948 will be recognized at the A. G. A. annual convention by presentations ranging from the highly coveted A. G. A. Distinguished Service Award to honors for home service and gas house heating progress. All entries should be addressed to American Gas Association, 420 Lexington Ave., New York 17, N. Y. Home service entries should be postmarked not later than July 30, 1949, and gas heating progress entries, not later than September 1, 1949. Deadline for the distinguished service, gas summer air conditioning and meritorious service entries is August 1, 1949. (Names of the 1947 award winners appear in November 1948 A. G. A. MONTHLY).

General conditions and requirements of the various honors are as follows:

● **A. G. A. Distinguished Service Award**—Entries due by August 1, 1949.

This is the industry's most coveted honor and is presented annually to the individual who has made the most outstanding contribution toward the advancement of the gas industry. The award consists of an engraved certificate and a substantial cash payment.

Since it was established in 1929, the award has been presented for developments in refrigeration, labor saving accounting, rate making, dealer cooperation, fortification and extension of industrial use of gas, public relations, changeover from one kind of gas to another, research, development of manufactured gas production processes.

● **Beal Medal**—Highest technical recognition in the industry, originated by the late W. R. Beal and now sponsored by Ernest R. Acker, president and general manager, Central Hudson Gas & Electric Corp., Poughkeepsie, New York.

The Beal Medal is awarded to the sole author of the best technical paper presented at a meeting of the Association or printed during the Association year. Award includes a bronze medal and financial recognition.

● **A. G. A. Home Service Achievement Award**—Entries must be postmarked not later than July 30, 1949.

Presented to directors of home service departments for achievement in the area served by each company and to those individuals whose ideas have contributed most to the advancement of modern homemaking by promoting interest in and better use of gas and modern gas equipment in the home. The award is sponsored by *McCall's* Magazine.

Unique feature of the contest is the recognition of individual ideas as well as contributions of home service departments. Such ideas of achievement may include community or group activities, home call operation, cooperation with the gas company, equipment or sales promotion, kitchen planning, activities with educational or other groups, or any other outstanding home service activity.

Financial awards and a bronze plaque will be presented to winners in each of three divisions: companies with more than three persons in the home service department, companies with at least one but not more than three home service representatives and to individual members of home service departments of three different companies whose ideas have contributed most to the advancement of modern homemaking through the use of gas equipment.

● **A. G. A. Gas Heating Progress Award**—Entries must be postmarked not later than September 1, 1949.

This competition has been specifically designed by The Coroaire Heater Corp., Cleveland, Ohio to give public recognition to individuals who have done most to create, maintain and increase consumer demand for gas heating. The award was first introduced in 1947 and consists of substantial financial payments.

● **A. G. A. Meritorious Service Award**—Entries due on or before August 1, 1949 on a form provided by the Association.

This award for heroic action continues to be the industry's highest recognition for the saving of life and property. It consists of a gold medal and button plus a certificate, and is presented to the individual who has performed the most meritorious act in the gas industry each year beginning July 1 and ending June 30.

The winner must have shown conspicuous judgment, intelligence or bravery in saving human life either in the plant or works of any gas undertaking or connected with handling of materials of manufacture or products manufactured or distributed.

The award was made possible through the generosity of the late Walter R. Addicks, senior vice-president, former Consolidated Gas Co. of New York.

● **A. G. A. Progress Award in Gas Summer Air Conditioning**—Entries due by August 1, 1949. Sponsored by Servel, Inc., Evansville, Ind., this award is designed to give recognition to exceptional achievement in the advancement of this important phase of gas industry activity.

All member gas companies are eligible. Requirements are outstanding accomplishments in any aspect of gas summer air conditioning during 1948.

The award comprises a progress trophy, substantial cash payment, and miniature trophies for individuals.

Bridgeport Gas sponsors novel baking show

A NEW GOOD-WILL GESTURE to commercial customers has been promoted by The Bridgeport Gas Light Co., Bridgeport, Connecticut. Hotel and restaurant personnel that bake on the premises, as well as retail bakers, were invited to a baking demonstration at the company's main office on two different evenings.

Sponsored by the gas company, the demonstration was put on by Procter & Gamble in the interest of their commercial shortenings. This service is available to all gas companies which can assure a representative audience.

Frank Seelinger, Procter & Gamble bakery research laboratories, Ivorydale, Ohio, showed the proper use of shortening and other ingredients for sweet dough and cake. The audience was shown how a variety of items such as tea rings, coffee cakes, sweet rolls and fancy coffee cakes can be made from basic sweet dough mix which is prepared in most instances in two or three minutes.

Part of the demonstration was devoted to explaining the use of a basic cake batter for layer, loaf and individual cup cakes. After all the mixes had been proofed, they were baked in a gas deck oven and sampled by the audience.

Frank Seelinger (left), Procter & Gamble Bakery Research Laboratory, preparing sweet rolls at recent demonstration sponsored by The Bridgeport Gas Light Company. Assistants J. T. Coty and F. J. Peterson of the gas company are shown discussing a pan of cake which is fresh from the gas oven

Water heater sale

ONE OF THE LARGEST sales of quality water heaters to any housing project was made early in 1949 when George L. Black, secretary-executive director, housing authorities of San Bernardino and Needles, Calif., authorized the purchase of 308 gas water heaters manufactured by A. O. Smith Corp., Milwaukee, Wisconsin.

Installation of this top-grade equipment and more than 600 other high quality gas appliances to replace competitive priced equipment even before it was completely worn out, would help to insure future low-cost operation for the authority, Mr. Black stated.

In addition to the water heaters, quality replacement of former equipment in the Waterman Gardens project of San Bernardino and other projects of the authority included the installation of 308 new gas refrigerators and 308 gas vented space heaters. All of the equipment purchased in this replacement has the approval of the American Gas Association Testing Laboratories.

Argentine gas line

ONE OF THE MOST IMPORTANT PROJECTS in the Argentine government's five-year program, a 1,050-mile, 10½-inch gas pipeline, is nearing completion.

The line, second longest in the world, has the most powerful pumping station of any system of its type. Started in February, 1947, it pipes gas from the Comodoro Rivadavia oil fields in southern. Chubut, to Buenos Aires. Work, proceeding from both ends of the line, has been hampered by lack of materials, but the two sections are expected to be linked by August or earlier. Pipe walls are 2½ inches in thickness to withstand the high pressures.

Richmond opens gas dealer display

Cooperative dealer display room opened by Department of Public Utilities, gas promotion division, in Richmond, Virginia. Under a prepared schedule, the space will be devoted entirely to display of gas ranges, water heaters, refrigerators and heating equipment. Assistance will be given to dealers in promoting sales through surveys and recommendations on the proper type and size of equipment

Thousands see Springfield exhibit

Display of Springfield Gas Light Company at Springfield (Mass.) Exposition and Trade Show, March 21-26. The company's gas exhibit area, for the first time, exceeded that of all electric competition

Rule simplifies water heater sizing

A PAR activity A NEW water heater sizing selector in handy slide-rule form will soon be produced for the use of water heater salesmen and plumbers. The selector goes beyond previous guides to water heater sizing in that it takes into consideration laundry equipment, kitchen equipment, number of bathrooms in the home, number of people in the home and whether they are adults or adults and children. This information can be lined up on the front of the rule quickly and easily to obtain an answer of peak load in gallons of hot water.

The back of the slide-rule lists, under the peak load, the proper size tank with the correct B.t.u. input—a factor which was overlooked in some previous sizing charts. Furthermore, the selection is based on an 80° rise in water temperature for southern states and a 100° rise for northern states. About six inches long, the slide-rule can be carried in the pocket. This ingenious new selector was developed by Everett A. Kelsey, Public Service Electric & Gas Co., Newark, N. J., and approved by the Water Heating Committee, Residential Gas Section, American Gas Association.

Advance orders are now being accepted by the A. G. A. Promotion Bureau which hopes to produce the rules in large quantity so that they will be available for less than 15 cents each. Imprint space is provided for manufacturer or utility company name.

Front view (top) and rear view (bottom) of new slide-rule which will simplify water heater sizing

American delegates to speak abroad

THE American Gas Association will be well represented at meetings of the gas industries of England and Europe to be held in London during the week of June 13, 1949.

Robert W. Hendee, president, A.G.A. and Colorado Interstate Gas Co., will present a paper on "Gas Industry Research in the United States" before The International Gas Union and another entitled "Peak Load Problems in the United States," before the British Institution of Gas Engineers. Major Alexander Forward, former A.G.A. managing director, and currently vice-president of The International Gas Union, will attend the meeting of the council of that organization and the conference which will follow. Edward J. Tucker, vice-president and general manager, Consumers Gas Co. of Toronto and a director of A.G.A., will attend both meetings.

During the week following the London meetings, the Association Technique de L'Industrie du Gaz en France will assemble in Lyon, with the same American representatives present.

F.P.C. directory lists 1,063 gas utilities

A DIRECTORY containing a complete list of the 3,866 electric and 1,063 gas utilities in the United States has been issued by the Federal Power Commission.

The publication, entitled "Directory of Electric and Gas Utilities—1948," also includes data on the principal utilities in the nation's territories and possessions, and for certain industrial plants that serve residential consumers in communities of 250 population or more.

A summary of data furnished in the directory shows that in the U.S., its territories and possessions, 1,067 gas utilities serve 7,045 communities with populations totaling 77,142,347.

A further breakdown of these figures reveals that of the 1,067 gas utilities, 696 distribute natural gas; 219, manufactured; 17, mixed; and 135, liquefied petroleum. The natural gas systems serve 4,755 communities having a total population of 34,577,392, while utilities distributing manufactured gas serve 1,629 communities with populations totaling 31,688,417. Mixed gas is distributed in 382 communities having populations aggregating 8,566,641, and liquefied petroleum in 279 communities with a total population of 2,309,897.

The directory was compiled from individual reports filed with the F.P.C. by the utility systems during the first half of 1948. The publication may be obtained from the Federal Power Commission, Washington 25, D.C., for $5.00. The order number is F.P.C. S-69.

Letter symbols for depreciation

THE ATTENTION of students of utility property service life experience is called to a recent bulletin "Letter Symbols for Mathematics of Depreciation." This publication was issued by the National Association of Railroad and Utilities Commissioners and is really a joint report on which representatives of the American Gas Association, Edison Electric Institute, and American Telephone and Telegraph Company collaborated with the NARUC Depreciation Committee.

Many thoughtful people, both within and without regulated utility industries, are using detailed mathematical and statistical symbols of service lives of utility property to arrive at estimates for annual depreciation charges and depreciation reserves. The agreement expressed in this report on the use of certain conventional mathematical symbols, if widely accepted, will at least assure that students of utility property service life experience will be talking the same language.

Copies of the report can be obtained for $1.00 on request to Ben Smart, secretary, National Association of Railroad and Utilities Commissioners, 7411-13-15 New Post Office Building, Washington 25, D. C.

Industrial relations

(Continued from page 14)

its employees and elected officers to retire as early as 55 years of age with incomes equal to one-third of their monthly pay up to a maximum of $300 a month. Membership in the plan is voluntary and is jointly financed, with the employees contributing two percent of their earnings and the employer (union) contributing the proceeds of a five-cent monthly special per capita tax. Both contributions are placed in a trust fund. There are two eligibility requirements: (1) one year of service with the employer (union) and (2) employee must be at least 35 years old. Employees have no voice in the administration of the plan. Retirement after 20 years under the plan is not compulsory but payments stop and benefits are frozen as of the date on which the employee becomes 55 years old.

● **"The Management Record,"** (March 1949 issue) published by the National Industrial Conference Board contains an interesting article, "Unions Go To White Collar Workers," which describes the organizing approaches and propaganda of the different white collar unions as well as the relative strength of each.

● **Attention is called** to the splendid article "What Makes a Good College Trainee for the Utilities?" in the March 3 issue of *Public Utilities Fortnightly* by Robert N. McMurry.

● **Management has won a round** in its court fight on overtime-on-overtime which may prove to set a national precedent for similar claims involving millions of dollars. The case involved some 1,200 walking bosses and terminal employees at the San Francisco and Oakland area docks, mostly members of the International Longshoremen's Union (CIO), who claimed about $1 million in back pay and damages for alleged overtime. A federal district judge has just ruled in favor of the dock employers on the grounds of "good faith" compliance with a 1938 ruling by a regional attorney for the wage-hour division. (N. Y. *Herald Tribune*).

Gas appliances star in leading films

A PAR activity ACCORDING to the American Gas Association's representative in Hollywood, Calif., 62 items of gas equipment have been loaned to movie studios from October 1, 1948 to January 31, 1949.

Gas appliances have been supplied for the following motion picture productions: "Blondie's Big Deal," "The Devil's Henchman," "Home in San Antone," "The Dumber Plumbers," "Rusty's Birthday," "Jolson Sings Again," "Danger Street," "Neptune's Daughter," "Any Number Can Play," "Murder in the Air," "Ma & Pa Kettle," "Bitter Victory," "Sam Wynn," "It's Only Money," "I Married a Communist," "Come to the Stable," "Mr. Belvedere Goes to College," "Slatter's Hurricane," "Too Late for Tears," and "Twilight."

Additional appliances will be shown in publicity photographs, commercial films and five sample movies for television purposes.

Utility companies are urged to watch for the release of these pictures and wherever possible to tie in locally and capitalize on the fact that again Hollywood selects gas equipment for its newest productions.

Gas water heater drive gains momentum

FIRST QUARTER RETURNS in the nationwide "Court of Flame" automatic gas water heating campaign indicate a mounting momentum for the drive, according to J. F. Donnelly, chairman of the sales promotion committee, Gas Water Heater Division, Gas Appliance Manufacturers Association. More than 308,000 "Court of Flame" tags have been sold already to manufacturers for attachment to gas water heaters, Mr. Donnelly reported.

Further indication of the campaign's early progress is supplied by Stanley C. Gorman, G. A. M. A. sales promotion director for the activity. After talks with distributors, dealers, utility executives and others in different sections of the country, Mr. Gorman declared that gas water heater sales are one of the bright spots in the merchandising picture.

One of the most popular items for promotion in the recent "Court of Flame" promotional portfolio, according to Mr. Gorman, is the newspaper mat service promoting automatic gas water heating, and the "Court of Flame" symbol or buyer's guide.

The mat service consists of five single-column 20-inch mats emphasizing the large quantities of hot water needed in the average home. These single column advertisements dominate the page because of their size and shape. In addition there is a series of five double-column advertisements which tie in with the findings of the Roper Survey, featuring the advantages of automatic hot water in the headlines and illustrating the "Court of Flame" symbol.

All these newspaper mats feature the American Gas Association slogan, "For Hot Water Magic—Gas Has Got It."

Full-size reproductions of these advertisements are shown in the "Court of Flame" portfolio together with point-of-sale display material, sizing charts, educational and sales training films.

Key men in gas companies are being told about the sales campaign by chairmen of interested committees of the American Gas Association. Hugh H. Cuthrell, vice-president, The Brooklyn Union Gas Co., and chairman, A. G. A. General Promotional Planning Committee, and W. D. Williams, Public Service Electric and Gas Co., Newark, N. J., chairman, A. G. A. Water Heating Committee, both have addressed communications urging utility executives to push the campaign in order to take advantage of the new home and replacement market by selling a banner number of automatic gas water heaters this year.

Mr. Williams has appointed the following regional chairmen to help in accelerating the campaign:

J. C. Willis, executive sales manager, Brockton Gas Light Co., Boston, Mass.; C. A. Kennedy, sales manager, New York and Richmond Gas Co., Staten Island, N. Y.; W. D. Williams, assistant to sales manager, Public Service Electric and Gas Co., Newark, N. J.; Ardmore Healy, Lone Star Gas Co., Fort Worth, Texas; A. G. Bur, sales manager, Wisconsin Public Service Corp., Green Bay, Wisc.; H. D. Wilson, sales manager, Michigan Consolidated Gas Co., Muskegon, Mich.; J. G. Tooker, new business manager, The Gas Service Co., Kansas City, Kans., and R. D. MacMahon, Southern California Gas Co., Los Angeles.

FOR
All the
hot water
you want
LOOK
for this symbol
AUTOMATIC GAS WATER HEATER
COURT OF FLAME
GAS APPLIANCE MANUFACTURERS ASSOCIATION
SYMBOL OF QUALITY
for top quality—maximum performance
in an automatic gas water heater
Which do you use most in your home — hot water or cold water? Surveys show that 80% of the average household water supply is hot water. For instance, it takes 15 to 20 gallons of hot water for a shower, 20 to 30 gallons for washing clothes, 3 to 5 gallons for dishes, 7 to 10 gallons for a bath. So, if you're planning to buy a new water heater, make sure you get one that will fit your family's needs.
LOOK for the "Court of Flame" Symbol of Quality. It's your guide to an Automatic Gas Water Heater of Top Quality and Maximum Performance, as certified and approved by the Water Heater Division of Gas Appliance Manufacturers Association.
GAS COMPANY NAME
FOR HOT WATER MAGIC GAS has got it!

Sample of new advertising mats supplied by G. A. M. A. as tie-in with water heating campaign

Natural gas operating revenues rise

OPERATING REVENUES of 83 natural gas companies reporting to the Federal Power Commission amounted to $103,684,128 in January 1949, an increase of 15.4 percent over the $89,824,872 reported for the same month a year ago.

Gas utility operating income for January 1949 amounted to $23,606,182, up 15.6 percent from the $20,422,081 reported for January 1948. Net income for the month was $23,106,197, compared to $20,315,690 reported in January 1948.

Gas operating revenue deductions amounted to $80,109,905, a gain of 15.4 percent. Of this total, operating expenses accounted for $58,906,726, up 16.0 percent; depreciation for $7,565,592, up 13.7 percent; and taxes for $13,637,587, up 13.7 percent.

Gas sales to ultimate consumers in January 1949 were 161,150,000,000 cubic feet, an increase of 14.5 percent over January 1948. Sales to residential consumers increased 7.2 percent and to commercial and industrial consumers 10.4 percent and 18.8 percent, respectively. Revenues from sales to ultimate consumers increased 12.9 percent and amounted to $54,735,879. Revenues from residential and commercial consumers were up 7.8 percent and 10.4 percent, respectively, while revenues from industrial consumers increased 27.4 percent.

For the 12 months ended January 31, 1949, gas operating revenues aggregated $893,159,583, an increase of 17.9 percent over the total of $757,711,572, reported for the 12 months ended January 31, 1948. Net income for the period amounted to $162,457,944, compared to $145,494,449 for the previous 12 months, or an increase of 11.7 percent.

Book cost of gas plant of the reporting companies aggregated $3,018,046,870 on January 31, 1949, compared to the $2,657,700,901 reported a year earlier. Corresponding reserves for depreciation and amortization were $871,440,120 and $830,407,417, respectively.

Record attendance at short course

HIGHLIGHT of the opening session of the twenty-fourth annual Southwestern Gas Measurement Short Course held at Norman, Okla., April 12-14, was an address entitled "Gas Pipe Line Financing" by C. T. Chenery, chairman of the board, Southern Natural Gas Co., Birmingham, Alabama.

The meeting was opened by C. E. Terrell, chairman, general committee of the short course, and the address of welcome was given by Dr. G. L. Cross, president, University of Oklahoma. The chairman of the executive committee, Dean W. H. Carson of the College of Engineering, University of Oklahoma, outlined to students from industry the operation and aims of the course.

Enrollment totalled 846, a record attendance. Seventy separate classes on diversified subjects covering every phase of gas measurement, gas regulation, and related subjects, were taught by qualified instructors from the University of Oklahoma and from industry. In addition, 29 manufacturing concerns sponsored educational exhibits.

Authors of prize-winning papers in the 1948 competition on "What I Learned at the Gas Measurement Short Course," were announced during the general session on Wednesday morning, April 13.

First prize of $25 was awarded to W. H. James, Lone Star Gas Co., Dallas; second prize of $15—Joe J. Hickey, United Gas Corp., New Iberia, La.; third prize of $10—G. W. Nickell, Phillips Petroleum Co., Penwell, Texas, and four prizes of $5 each—Jim Berling, Texas Gulf Sulphur Co., Newgulf, Texas; Glenn E. Graef, United Gas Pipe Line Co., San Antonio, Texas; James W. Smith, Peoples Natural Gas Co., Ralston, Neb., and E. T. Rogers, The Shamrock Oil and Gas Corp., Amarillo, Texas.

J. L. Griffin, chairman of the publications committee, has announced that proceedings of the short course will be published in bulletin form and a complimentary copy will be sent to those who registered for the course.

The general committee issued a Practical Methods Report prepared by the chairman of the practical methods committee, G. E. Greiner, entitled "A Condensed Outline of Supercompressibility Determination Methods."

W. H. Woods, Gulf Oil Corp., Houston, Texas, has been elected to succeed Mr. Terrell as chairman of the general committee. Mr. Woods will serve as general chairman during 1950, and be responsible for over-all activities of the next short course, April 11-13, 1950.

Texas Gas to construct line in 1949

TEXAS GAS TRANSMISSION CORP., Owensboro, Ky., has received final approval to build and operate a 26-inch natural gas pipeline that will stretch more than 800 miles from the fields of Texas and Louisiana, through the Mississippi and Ohio River valleys to a connection with the Big Inch pipeline system of Texas Eastern Transmission Corporation near Middletown, Ohio.

Consumers as far north and east as Syracuse, New York will receive more gas as a result of this project. Plans call for the construction of a $73,500,000 line that will be in operation this year and will add approximately 400 million cubic feet of gas daily to the present pipeline capacity of Texas Gas.

The 800-mile line will supplement the company's existing pipeline system of 1,600 miles. Completion of the project, with its added 68,000 compressor station horsepower will make Texas Gas one of the largest pipeline companies in the United States.

According to W. T. Stevenson, executive vice-president, the line should be in operation by the end of the year.

Stone & Webster Engineering Corporation will undertake construction of compressor stations for the line. L. E. Ingham, vice-president of Texas Gas, will supervise the over-all construction.

CP gas ranges "ideal" for apartments

AUTOMATIC GAS RANGES built to CP standards are as ideal for the apartment dweller as they are for the owner of a large suburban estate, according to Harry Klenoff, president, Harry Klenoff Co., Inc., New York, N. Y. Due to the selling job accomplished by his firm, 870 Fifth Avenue, one of New York's outstanding apartment structures, is installing in all its apartments, gas ranges, many of which are "CP."

"Our experience has proved," Mr. Klenoff declared recently, "that the apartment kitchen often becomes more the 'heart of the house' than in any other type of dwelling.

"On the one hand you have the lush and spacious suite that is simply a transportation of suburban estate to the city. All the features that are wanted in any well-equipped and well-staffed kitchen are needed there.

"On the other hand, a more modest abode is the living headquarters of the couple who spend the day at work and must budget their time as much as their income.

"CP gas ranges, which in most people's minds are synonymous with automatic cooking, fill such a crying need in both instances that our organization always recommends them for apartments—whether new construction or maintenance."

Mr. Klenoff notes that automatic gas ranges built to CP standards have many advantages which far offset the slight differential in cost. The CP gas range is sturdy, practical and well-constructed. The CP standards of the Gas Appliance Manufacturers Association stipulate higher operating efficiencies, more convenience and performance features, including automatic lighting of all burners.

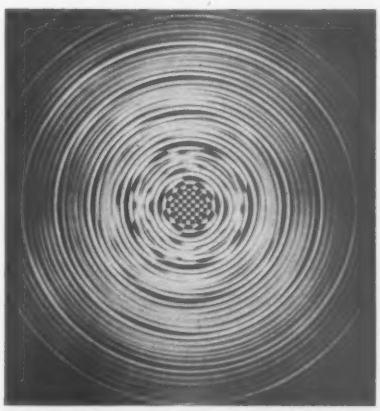
Test pipe has incredible smoothness

A PAR activity

TWENTY-FOOT sections of stainless steel pipe with an interior smoothness exceeding that of the average glass mirror, have been completed for the American Gas Association by the Naval Gun Factory in Washington, D. C. Surfaces of the pipe sections have a finish so super-smooth that the average deviation from a straight line drawn through peaks and valleys is only five-millionths of an inch.

Sections of the three-inch diameter pipe were chucked in a massive big-gun lathe and after straightening were bored and honed just as if they were naval rifles. The resultant product is smoother than any pipe ever before available to the gas industry.

It is believed, moreover, that this is the first time such near perfection has been achieved in pipe 20 feet long. As a result, important progress is expected in the current joint investigation of pipeline flow by the American Gas Association and U. S. Bureau of Mines. The A. G. A. project committee under the chairmanship of C. H. M. Burnham, Panhandle Eastern Pipe Line Co., believes that the stainless steel sections will prove extremely valuable in the search for a natural gas flow equation under conditions of higher pressure, bigger lines and greater flow rates.



Multiple reflections from checkerboard at far end of 20-foot pipe attest to smoothness of pipe

Gas officials featured on radio

GAS INDUSTRY OFFICIALS played detective April 14 on "The Five Mysteries" program over radio station WOR in New York. A panel of five experts on the program included Noel Mallaby, McCann-Erickson Advertising Agency which service› the American Gas Association account; Richard Plata, assistant sales manager, New York & Richmond Gas Co., Staten Island; W. D. Williams, assistant to sales manager, Public Service Electric & Gas Co., Newark, N. J.; John B. Frost, retail sales supervisor, The Brooklyn Union Gas Co., and Sol W. Weill, eastern manager, Geo. D. Roper Corporation.

Throughout the half-hour program, adlibbed remarks by panel members included the inevitable expression "cooking with gas." Three of the five amateur sleuths won prizes.

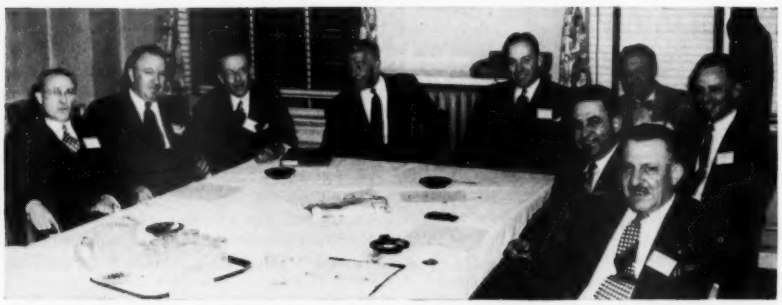
Another personal appearance on a radio program was made by Mrs. Eleanor Wiese, home service supervisor, Public Service Electric & Gas Co., Newark, N. J., on WOR's nationally-known Barbara Welles' afternoon program on April 22. Guest was Lee Tracy, star of stage and screen. Mrs. Wiese answered questions on gas appliances for the home.

On another program, Nancy Craig, well-known broadcaster on station WJZ in New York, told her listeners how to plan a well-integrated laundry to save steps and energy. She offered to her listeners two four-color reprints of the "Sunny Monday" and "Ranch House" automatic gas laundry designs supplied by the A. G. A. New Freedom Gas Kitchen Bureau.

Women broadcasters are consistently using material supplied by the A. G. A. Publicity Bureau to help tell their listeners about the efficiency of gas equipment in the home.

Carl Caruso, announcer, and Mandy Brown, producer of the "Five Mysteries" radio program on WOR, giving cue to gas industry participants: (Left to right) Sol W. Weill, Philadelphia; John B. Frost, Brooklyn; Noel Mallaby, New York; W. D. Williams, Newark, N. J., and Richard Plata, Staten Island

Industrial and commercial groups meet



A. G. A. Industrial Processing Committee meeting in Nashville April 5 during A. G. A. Sales Conference on Industrial and Commercial Gas: (Left to right around table) Paul R. Dreyer, Chicago; G. R. Van Kempen, L. R. Foote, New York; R. W. Millard, chairman, C. C. Eeles, Detroit; Carl Wierum, Brooklyn; E. L. Harris, West New York, N. J.; E. V. K. Schutt, Newburgh, N. Y., and E. B. Freeman, Muncie, Ind.

Metals Committee in Nashville: (Seated) R. L. Melaney (left), Pittsburgh; A. M. Thurston, Cleveland; E. B. Freeman, Muncie; Carl Wierum, Brooklyn; S. C. Parker, Chicago; E. J. Funk, Jr., Baltimore; J. E. Pittenger, Philadelphia; (standing) R. E. Crane, Elizabethtown, N. J.; K. I. Robinson, Newark

Eyes of Main Street

(Continued from page 4)

universities and various individual companies, has helped many men to pass on the fruits of their education to the betterment of gas service. These men have received rewards from their companies in fair measure.

In my opinion, we will do well to increase the opportunities for employees to secure additional technical training to the point that these facilities will be available to all of our employees rather than to a few key men. Furthermore, greater emphasis must be placed on the training of younger men to take the place of those who are to succeed us. Every effort must be made to see that the heritage of our great industry is not lost by lack of trained personnel for administrative and executive positions. We must not be afraid to delegate responsibilities to younger men. Their success will depend upon our willingness to permit them to shoulder the burdens which someone must carry.

The adoption by many companies of pension plans, paid vacations, insurance, sick leave, holidays and loan funds, has been convincing evidence to worthy and intelligent employees that their efforts are appreciated by management and stockholders. These extra compensatory features of employment have increased the desire of many employees to remain with the industry at periods when competitive work might have appeared more enticing. We should continue our study of the human relationships which exist between employees and management to the end that all of our people will feel that they are engaged in an honorable calling and that they occupy places of dignity and respect.

There is another area in employee re-

lationships where great improvement can be made. In order to have confidence in our employees, we must confide in them. We must be willing to tell them about our business, its problems and our problems in the handling of it. In doing this, we must maintain organizational lines in every way possible. We must insist that supervisory employees have a sufficient amount of knowledge concerning the business to pass it down the line to the last man in a way that it will be understood. There is no short-cut which will substitute for each supervisory employee knowing his men and how to work with them.

But in order to accomplish this desirable result the supervisor must be well acquainted with the aims and objectives which we are seeking to attain. A heavy responsibility rests upon us to train these supervisors from top to bottom. They must know our business. We cannot take it for granted that supervisors can explain even employee benefits to their people. We must know what they can do. On these and other important items the eyes of Main Street can be the ears of Main Street. Neighbors and friends of our employees know full well, frequently better than we, whether our message to employees is properly told.

From years of observation, I have reached the conclusion that it is necessary for all employees in the gas industry to be more civic-conscious than in the past. When our employees, as citizens, come in daily contact with customers, it is helpful for our representatives to be looked upon as men of character and good will. An employee working in the kitchen adjusting a range can be an expert in his line; yet he can do the gas company a great deal of damage. To overcome some of this, we must encourage more employees to take part in work in community enterprises, such as the Community Chest and Red Cross drives.

People who have favorite charities are grateful for the aid of men who are employed by responsible concerns. They respect management which will employ men who have civic-consciousness. For bad or good, there is no way our people can disassociate themselves from our companies in the public mind. Our encouragement to employees to live honorable lives, to be patriotic citizens, to give their time and efforts to the up-building of their communities, will speak well for the industry. The time spent by those who are willing to assist in joint community efforts will adequately compensate the business, because the result is invariably better employees.

I believe this is especially true at the present time. We cannot expect employees to eliminate from their minds general, social, political, and economic problems. A few of them are being influenced by forces which are clever and fanatical. Anything we can do to encourage employees to see the American way of life in the making will cause them to have greater respect for their opportunities for freedom, education and enlightenment. To me this is a goal highly to be desired, and we can attain it best by setting a good example.

Let us remember that the eyes of Main Street are upon us. But, the people of Main Street are not just passers-by. The people of the Main Street of today are watching the improvements and research that is being done by the gas industry. They are watching developments in gas appliances. Some of them are scientists who are watching our work in technical fields which have never been previously explored. Restaurant men are watching us for new ways to prepare and cook food, and they are important because they are one of the largest industries in the country.

All sorts of people are watching our business and our activities. As representatives of the gas industry, it is our duty, by research, by the development and sale of new ideas, to continue the high standard of living we have attained for the American people. Opportunities for the future of our business and its people, like Main Street, have no end.

Gas industry sales

(Continued from page 4)

will help sell appliances, according to the president of a Southern gas company. "Continued research will improve these appliances so that our customers will not want to change from gas to electric. The A. G. A. is doing an excellent job; all it needs is more support from the industry."

The general attitude was summed up by two utility company presidents. "We have got to get down to bed rock and start pulling door bells—and the quicker we start the quicker we shall get results," one stated.

"Depend on us to do our part in keeping the trend toward gas," the other declared.

OBITUARY

Marcy L. Sperry

M. L. Sperry

for the past 17 years, president, Washington Gas Light Co., Washington, D. C., died on March 30. Mr. Sperry had resigned his position as president, effective March 30, and was due to become chairman of the board of directors. This move had been considered for several weeks previous, and Mr. Sperry was in hearty accord with changes elevating other top management personnel of the company.

Mr. Sperry was a former director of the American Gas Association and was well-known throughout the entire industry. His administration as company president was a period of great success and the present sound position of Washington Gas Light Company is considered a monument to his leadership.

He possessed numerous friends and philanthropic interests and his likeable traits were reflected in his management of company affairs.

Born at Annapolis, Md., the son of Rear Admiral and Mrs. Charles S. Sperry, he attended schools at Charlottesville, Va., Washington, D. C., Pratt Institute in Brooklyn, and Massachusetts Institute of Technology.

Prior to his election as president of Washington Gas Light Company in 1932, Mr. Sperry had served with Stone & Webster Service Corporation for more than 30 years. During that period he held various executive positions, operating and managing public utilities.

Edmund Davis

chemical engineer and assistant plant superintendent, Brooklyn Borough Gas Co., with which he had been associated for the last 22 years, died of a heart attack April 10. He was 60 years old.

Mr. Davis had been in the gas business for 40 years. From 1909 to 1914 he was with The United Gas Improvement Co., Philadelphia, and then for four years was assistant chemical engineer with C. C. Tutwiler in Philadelphia. Before he came to Brooklyn Borough Gas Company in 1927 he was with American Gas Company in Philadelphia.

In World War I he served with the U. S. Ordnance on high and low coal gas plants, and also on coke ovens.

Surviving are his widow, Mrs. Florence E. Davis; two daughters, June Ann Davis and Mrs. Thelma M. Vinal, and four grandchildren.

Distribution conference

(Continued from page 32)

Sidney E. Trouard, New Orleans Public Service Inc., chairman; P. H. Miller, Texas Eastern Transmission Corp., vice-chairman. The program touched on practically every branch of corrosion control work.

Highlight of the meetings was a rapid-fire panel discussion on hot applied coatings. Mr. Trouard served as moderator, and technical representatives from 11 coating and wrapping manufacturing companies answered questions from the audience.

Topics discussed during the conference on general corrosion problems were as follows:

Use of steel coupons as reference electrodes; practice of using magnesium anodes on unprotected steel pipelines where corrosion pits have occurred; methods used to change pipe-to-soil potentials; methods of making soil resistivity measurements; methods of checking the efficiency of buried insulating couplings; use of the copper sulfate reference electrode; cathodic protection of steel pipe; cathodic protection of services; use of galvanized pipe in distribution systems, and use of insulating fittings on services.

F. E. Kulman, Consolidated Edison Co. of New York, Inc., discussed "Corrosion Control of High Pressure Gas Distribution System." Detailed data on his company's studies of aerobic and anerobic corrosion were submitted in statistical form, together with an outline of corrosion control methods used by the New York utility.

In his paper, "Rectifiers and Galvanic Anodes for Cathodic Protection," A. L. Stegner,* Tennessee Gas Transmission Corp., presented case histories to illustrate the installation and operation costs of these two systems. M. C. Miller, Ebasco Services, Inc., declared that most companies are making little effort to determine their actual corrosion costs. He showed from a study of four companies that this cost falls between five and six percent of the total operating costs.

H. F. Koester and O. E. Stamm, Consolidated Edison Co. of New York, Inc., discussed with illustrations, the operation and use of instruments in corrosion control work.

A special contribution of the Corrosion Committee was the paper which A. D. Simpson, Jr.,* United Gas Corp., Houston, delivered on "Practical Cathodic Protection for Gas Distribution Systems" at the Wednesday morning general session.

New records for attendance were set at the Construction and Maintenance luncheon meetings on Monday and Tuesday. Among the newer subjects which were selected after contacting member companies were: "Tamper-Proof Service Cocks," "Damages to Mains and Services Due to the Construction of Others," and "Halogen Leak Detectors."

One of the highlights was presentation of a 53-page booklet "Methods, Materials and Machines for 1949,"* designed and compiled by the subcommittee.

Service trenchers was covered by discussion and pictures and demonstrated through the cooperation of manufacturers and The Cincinnati Gas & Electric Company. Some 200 men attended the first demonstration on Sunday afternoon and at least 100 attended the second on Thursday morning. This was the first time such equipment had been exhibited in connection with the Distribution Conference, and much favorable comment was received.

Construction and Maintenance

Luncheons of the Construction and Maintenance Subcommittee were presided over by F. J. Hall, Michigan Consolidated Gas Co., as chairman and J. A. Whelpley, The Cincinnati Gas & Electric Co., as vice-chairman. The group also sponsored three papers at general sessions and arranged for the composite film showing on Wednesday afternoon.

Two active luncheon meetings were held by the Subcommittee on Meters and Metering with R. J. Ott, The Philadelphia Gas Works Co., chairman, and G. K. Bachmann, Public Service Electric & Gas Co., vice-chairman, presiding.

On April 4, W. R. Berger, Consolidated Edison Co. of New York, Inc., exhibited an index designed so that the dials used for meter reading will be in the center, thus helping to solve the problem of reading meters that are set far above the eye level. Mr. Ott reported progress on obtaining government permission to use a thicker tin coating than is presently allowed for gas meter tinplate.

Another interesting discussion on the desirability of standardizing outside dimensions of similar meters made by different manufacturers was led by George E. Griffin, The Brooklyn Union Gas Company. Elmer Becker, Citizens Gas & Coke Utility, Indianapolis, led a discussion on condemnation procedure.

A discussion of mechanical opening machines was led by Mr. Bachmann, who was assisted by R. A. Seifert, The Cincinnati Gas & Electric Company. A discussion on house regulators, led by B. C. Holman, Minneapolis Gas Co., was devoted in part to the merits of changing regulators periodically for testing and overhauling, compared with the making of repairs on customers' premises. Tuesday's conference included a report on revision of the rules first compiled in 1922 for capacity testing of meters. F. C. Morey, National Bureau of Standards and a new member of the committee, was the speaker.

R. F. Diehl, The Laclede Gas Light Co., St. Louis, Mo., led a discussion on the advantages and disadvantages of iron, aluminum and tinplate meters. Other topics and the respective discussion leaders were as follows: W. J. Menet, The Peoples Gas Light & Coke Co., discussed proper meter capacity for supplying loads under various conditions of diversity, and need for continuous gas supply; G. K. Bachmann discussed types of modern meter connections; Gordon Dye, Southern California Gas Co., outdoor meter installations using copper corrugated meter connections and enclosing the installation in a concrete pre-fabricated box.

H. S. Houghton, Michigan Consolidated Gas Co., covered the subject "Control of Meter Proof By Control of Saturation"; Gilbert Estill, Oklahoma Natural Gas Co., discussed auxiliary apparatus required for orifice metering, and Mr. Bachmann told of various attempts, most of them unsatisfactory, to test small domestic gas meters on the customers' premises as a substitute for conventional change and shop test procedure.

The Subcommittee on Distribution Design and Development sponsored the first separate luncheon meeting it has ever held on Monday. Under its chairman, V. F. Bittner, The Peoples Gas Light & Coke Co. and its vice-chairman, L. A. Bickel, Lone Star Gas Co., the group scheduled two papers for the general sessions and six others for luncheon discussion.

W. P. Dick, The Ohio Fuel Gas Co., presented a simple method of appraising the capacity and performance of existing facilities by determining the flow through

district regulators with a pitot tube flow meter.

Hubert G. Howell, Memphis Light, Gas & Water Div., City of Memphis, discussed the need of constant ventilation of district regulator vaults; R. H. Freeman, Public Service Co. of Denver, discussed forced ventilation of vaults with power blowers; H. M. Dwight, Southern California Gas Co., covered advantages of full opening vaults equipped with aluminum plate covers; Willard E. Kemen, Milwaukee Gas Light Co. and Martin I. Mix, The Peoples Gas Light & Coke Co., led a discussion on the use of alarm gauges for district regulators.

The Tuesday luncheon conference opened with a presentation of four papers on installation of copper service piping by: L. H. Thorson,* The Peoples Gas Light and Coke Co.; R. C. Barfknecht, Michigan Consolidated Gas Co., H. M. Dwight; R. W. Alexander,* The Cincinnati Gas & Electric Company.

The consensus of opinion was that it is profitable for a company to replace old leaking services with copper services at the current price, but that on new installations copper service tends to be more expensive than steel. M. C. Miller, Ebasco Services Inc., summarized the corrosion engineer's viewpoints regarding desirability of insulating copper service installations from iron and steel systems.

Plastic service pipe installations were discussed by H. M. Dwight. V. F. Bittner then summarized the answers to a questionnaire on the terms "low pressure," "medium pressure" and "high pressure" as used to designate distribution system.

An informal panel discussion of space heating, light-ups, and cleaning opened the Monday Luncheon meeting sponsored by the Work on Consumers' Premises Subcommittee. R. B. Barger, The Hartford Gas Co., chairman, and J. M. McCaleb, Citizens Gas & Coke Utility, presided. Panel members included R. H. Bussard, Washington Gas Light Co.; C. S. Hazel, The Philadelphia Gas Works Co.; J. G. White, The Peoples Gas Light & Coke Co.; and Thomas E. Darby, The Ohio Fuel Gas Company.

One company representative reported that 55 percent of the customers in his territory leave their pilots on all summer, and that by encouraging this policy the company has saved about $20,000 on lighting and shut-off loads. One company reported a three-dollar lighting fee.

W. H. Weber, The Brooklyn Union Gas Co., and S. E. Critchfield, Southern California Gas Co., directed a lively discussion on job training methods for servicemen. Mr. Weber remarked that training of supervisors should be tied in closely with the training of servicemen. One delegate suggested that smaller gas companies start their own joint training school.

Mr. Barger read the paper of D. E. Farmer, Portland (Ore.) Gas and Coke Co., discussing refrigerator servicing problems.

At the Tuesday luncheon, J. G. White reported good success using stainless steel chimney liners. Other delegates reported successful use of lead-coated copper, aluminum when the aluminum oxide coating is unbroken, glazed tile and other materials.

W. H. Weber, Brooklyn, and John MacLarty, Rochester Gas & Electric Corp., opened an interesting general discussion of radio dispatching and use. General opinion on savings in customer servicing through two-way radio, agreed that though actual servicing costs are difficult to estimate, two-way radio provides a type of service that can not be obtained any other way. One delegate described remote receiving points which his company has established on gas holders in mountainous territory.

Another delegate declared that his company "is completely sold on mobile radio and is striving to build efficient customer services rather than to reduce radio investment costs."

The discussion also showed that radio can be very helpful in illuminating callbacks from relatively untrained men in the field.

Requirements simplified

(Continued from page 33)

A particularly constructive action was the establishment of a procedure for motivating the certification of appliances and accessories for which definite standards or requirements have not been adopted. For example, a gas-fired chicken brooder, weed killer or popcorn popper does not fall within a generic classification for which standards already have been established. Handling of requests for approval of such equipment was assigned to the Subcommittee on Standardization of Requirements. The responsibility was also delegated to this group of formulating recommendations to the Approval Requirements Committee as to possible certification, specifying what tests should be employed and how they should be conducted. Appliances falling within the generic classification but employing novel construction not covered by existing test methods will continue to be reviewed by the subcommittee responsible for the existing standards.

A number of changes in subcommittee structure were also made and requirements for inactive equipment withdrawn. The subcommittees for (1) hotel and restaurant ranges, deep fat fryers and unit broilers (2) gas counter appliances and (3) portable gas baking and roasting ovens were consolidated. This places the combined group in a better position to correlate requirements for related appliances and advise on commercial cooking equipment. The subcommittee for requirements committee procedure and personnel as well as the one for appliance and accessory changes affecting requirements were dissolved as they were not required under present conditions.

Four sets of requirements were withdrawn and similar action recommended on the part of the American Standards Association, Inc. This action was due to lack of interest and activity in the certification of equipment covered by the requirements. Requirements withdrawn were for private garage heaters, gas-heated ironers, industrial gas broilers, and low water cut-off devices.

In the future, requirements will be published in a larger size which is easier to use and file and which conforms with American Standards Association recommendations. The new size will be 8½ by 11 inches except for installation requirements which will be published in a 4 by 6¼ size for pocket use. Contrasting type will be used which distinguishes between requirements and test procedure. A numerical system of identifying each section and clause will also be adopted in line with A.S.A. recommendations. These improvements will contribute materially to the effective handling and use of future requirements.

Boothby heads Washington Gas Light

EVERETT J. BOOTHBY, vice-president and general manager, Washington Gas Light Co., Washington, D. C. since 1932, was elected president of the company on March 30. Mr. Boothby is a former president of the American Gas Association and is widely known throughout the industry. He is a present member and a former vice-chairman of the Association's PAR Committee.

At the same time, Howard B. Noyes, formerly general superintendent of the utility, was named vice-president. Re-elected were Robert C. Owers, vice-president and treasurer; Otis H. Ritenour, comptroller, Carroll C. Pike, assistant comptroller; Wylie W. Barrow, A. Gray Dawson and Frank R. Holt, assistant treasurers; and Edward T. Stafford, secretary.

Other organizational changes include: A. W. Johnston, Jr., from superintendent of distribution to director of personnel; Frank P. Lamb, from superintendent of production to superintendent of distribution, and Donald S. Bittinger from director of personnel to general superintendent.

Announcement was also made of the retirement of James D. Dingwell, Jr., who has been associated with the company for the past sixteen years, to become a consultant on personnel policies and labor relations problems in Washington, D. C.

E. J. Boothby

H. B. Noyes

J. D. Dingwell, Jr.

Mr. Boothby is a graduate of Tufts College. Prior to his affiliation with Washington Gas Light Co., he was associated with several large public utilities and engaged in private manufacturing. He is also a director of McLachlen Banking Corporation and the Better Business Bureau in Washington.

Mr. Noyes graduated from Cornell University and from 1927 to 1938 served as gas engineer with Philadelphia Electric Company. From 1938 to 1940 he was manager and treasurer, Manchester Gas Co., Manchester, New Hampshire. He has been general superintendent of the Washington Company since 1940.

Mr. Dingwell was made assistant vice-president, in charge of personnel relations in 1937. From 1938 to 1942 he was chairman of the A.G.A. Committee on Personnel Practices, now the A.G.A. Personnel Committee.

Personal and otherwise

Canadian gas man enters retirement

AFTER 48 years in the Ontario gas industry, E. C. Steele has retired as general superintendent, Union Gas Co. of Canada, Limited. Mr. Steele has been with the Union Company in Chatham for 31 years and has contributed widely to the development of the gas industry. He has also been active in many community projects in the Chatham district.

Mr. Steele started in 1901 as a teamster hauling materials in the Welland County gas fields and joined Provincial Gas Company three years later. On April 1, 1918, he moved to Chatham as assistant to the superintendent of the Union Company. Later he was appointed superintendent of transmission and distribution, and in 1930, general superintendent.

Mr. Steele has been active in safety work for more than 20 years. He has been chairman of the Essex-Kent and the chemical industries safety associations, a member of the administrative committee of the Industrial Accident Prevention Association for many years, and president in 1940. He is a member of the American Gas Association.

Two East Ohio gas executives advanced

GEORGE W. HORSLEY has been appointed general manager and Robert W. Ramsdell general superintendent, The East Ohio Gas Co., according to an announcement by J French Robinson, president. Mr. Horsley's term of office as local manager spanned the years from 1926 to 1933, while Mr. Ramsdell held the position from 1934 to 1944.

Mr. Horsley has served the utility for 33 years. He graduated from Case Institute of Technology in 1915 with a bachelor of science degree in electrical engineering and immediately after began his career as an assistant electrolysis engineer. After World War I, he returned to The East Ohio Gas Co., serving as superintendent of the Cleveland plant from 1920 to 1925, local manager of the Youngstown division from 1926 to 1932, general superintendent of outside towns in 1933, and general superintendent of the entire system from 1934 to the present date.

Mr. Ramsdell has been with the company 21 years. Also a graduate of Case Institute of Technology with a bachelor of science degree in civil engineering, he too entered the company's employ immediately upon graduation. Mr. Ramsdell later held many of the positions previously held by Mr. Horsley. He served as general foreman in Akron in 1932, general foreman in Youngstown in 1933, local manager in Youngstown from 1934 to 1944, and as assistant general superintendent in Cleveland from 1945 to the present time.

G. W. Horsley

R. W. Ramsdell

Both men are members of the American Gas Association.

Southern California president honored

FRANKLIN S. WADE, president, Southern California Gas Co., received recognition in Los Angeles recently for his outstanding achievement in pioneering a pipeline to bring Texas natural gas to California.

At a luncheon given in his honor by members of the Southern California Financial Writers Association, Mr. Wade was presented with a "Certificate of Merit for Outstanding Community Service." Only two other men have previously been so honored. J. K. Baillie, financial editor, *Los Angeles Herald & Express* and president of the writer's group, presented the award and pointed out that last winter Southern California residents were saved from serious discomfort during the most severe weather in the Southland's history only by the wisdom and foresight of Mr. Wade and his associates in the two local gas companies. Natural gas brought from Texas made it possible for the companies to meet an unprecedented demand.

Lovett retires from Milwaukee companies

J. A. B. LOVETT resigned April 18 as president, Milwaukee Gas Light Company and Milwaukee Solvay Coke Company due to ill health. Mr. Lovett became president of the coke company in 1939, moving from Hamilton, Ohio where he had served with American Rolling Mill Company. Before that he had been associated with Koppers Company.

He was advanced to executive vice-president, Milwaukee Gas Light Co., in 1947 and president in February 1948, continuing as president of the coke company.

In the meantime, Glenn R. Chamberlain, executive vice-president of both companies since February 7, 1949, and who directly represents the interests of American Light & Traction Co., the parent company of Milwaukee Gas Light, will continue in that office.

Louis G. Kreuz, has resigned as assistant manager of operations, Michigan Consolidated Gas Co., Detroit, to become vice-president and general manager, as well as a director, Milwaukee Solvay Coke Company.

Mr. Kreuz was born in Menominee, Mich., and is a graduate of the College of Engineering, University of Wisconsin. After graduation he was employed by Consolidated Gas Company of New Jersey at Long Branch. In 1919 he became connected with Detroit City Gas Co., now a part of Michigan Consolidated Gas Company. Among the positions he has occupied are chief chemist, superintendent, and superintendent of production. He has been assistant manager of operations, Michigan Consolidated Gas Co., for three years.

J. A. B. Lovett

Both Mr. Lovett, Mr. Chamberlain and Mr. Kreuz are members of the American Gas Association.

Gueffroy named head of Oregon utility

AS A STEP in the complete separation of Portland Gas & Coke Co., Portland, Ore., from its electric affiliate, Pacific Power & Light, Paul B. McKee resigned April 7 as president and director of the local gas utility.

Elected to succeed him as president was C. H. Gueffroy, gas company vice-president since 1945 and assistant to the president for 13 prior years. He has been with the company since 1919. Mr. McKee will continue as president of Pacific Power & Light Company. Both men are members of the American Gas Association. R. G. Barnett, chairman, A.G.A. Publicity & Advertising Committee, continues as vice-president and general manager, Portland Gas & Coke Company.

Although they always have been separate companies, Portland Gas and Pacific Power were for many years served by the same executive officers and had numerous joint employees. More recently, their organizations have been almost completely separated.

With Mr. McKee's resignation from the gas company, the two utilities now have entirely separate staffs. When their parent, American Power & Light, disposes of its interest in Portland Gas & Coke the one remaining corporate interconnection will be dissolved.

In line with the separation program, it was also announced that John A. Laing, for many years a director of both Portland Gas and Pacific Power, is resigning from the electric company's board. He will continue to serve as a director of the gas company and as counsel for the two utilities. James F. Bell, who had served as Mr. McKee's assistant in both companies, is now Mr. Gueffroy's assistant.

C. H. Gueffroy

Conover retires from Public Service

JOHN L. CONOVER, general commercial manager, Public Service Electric & Gas Co., Newark, N. J. since January 1940, retired on pension April 7, 1949 after more than 41 years' continuous service with the company. At the same time announcement was made of three organizational changes in the commercial department, effective April 11.

Herbert E. Cliff, has advanced from assistant general commercial manager to general commercial manager. Gordon M. Peterson, has advanced from assistant to the general commercial manager, to assistant general commercial manager. Louis R. Quad, formerly commercial manager, central division, has been made assistant general commercial manager.

Mr. Conover is a former chairman of the Accounting Section, American Gas Association, and in 1930 received the Association's Charles A. Munroe Award for his accomplishments in the field of machine accounting. He has been a director of the New Jersey Gas Association almost continuously since 1924, and served as that group's president for the 1927-28 term.

During his career with the company, Mr. Conover played an important part in the development of machine methods of accounting and in the modernizing of commercial activities. Most important of these activities was the development of present methods of general bookkeeping, customer billing, and the "stub plan" of accounting in the company's commercial offices. In cooperation with accounting equipment manufacturers, he has influenced the design of many machines now in use not only at Public Service but in the entire gas and electric industry.

J. L. Conover

H. E. Cliff

G. M. Peterson

Mr. Cliff was chairman of the Accounting Section, American Gas Association in 1937, and a member and chairman of numerous committees of the American Gas Association and Edison Electric Institute. He served as president of the New Jersey Gas Association in 1936.

Following graduation from Swarthmore College in 1924, he joined Public Service as a commercial cadet. He later became, successively, assistant to the auditor, then assistant to the general auditor, gas department and finally, assistant general commercial manager in January 1940.

Mr. Peterson is a former chairman of the A.G.A. Personnel Committee, and ic currently an active member of that group. He graduated from Princeton University in 1925 and joined Public Service as a commercial cadet that same year. Since then he has been director of educational work, assistant general agent, and assistant to the general commercial manager, a position which he held from September 1940 until his present appointment.

Mr. Quad has served as chairman of the A.G.A. Convention Entertainment Committee. He joined Public Service as a commercial cadet in 1926 following graduation from Rutgers University. He later served in the Newark commercial office, then as head collector and meter reader, assistant commercial manager in Newark, and assistant commercial manager—sales. Since January 21, 1946 he has been commercial manager of the central division.

McDowell takes new post at Peoples Gas

REMICK MCDOWELL, secretary, The Peoples Gas Light and Coke Co., Chicago, since December 31, 1945, was elected assistant to the chairman at the recent annual meeting of the company's board of directors. This is a new elective office in the organization. Mr. McDowell also will continue to function as secretary. At the same meeting Robert M. Drevs was elected an assistant secretary and assistant treasurer.

Mr. McDowell has been associated with The Peoples Gas Light and Coke Co., for the past nine years, joining the organization in 1940 as assistant to the secretary. Prior to that time he spent 13 years with Commonwealth Edison Company. He is a member of the American Gas Association.

At the same meeting the directors re-elected all officers of the company as follows: James F. Oates, Jr., chairman; George F. Mitchell, president; vice-presidents, Eskil I. Bjork, Philip E. Eddy, Frank L. Griffith, Francis X. Metenet, Karl B. Nagler; Allan J. Good, treasurer; Stuart J. Barrett, assistant vice-president and assistant comptroller; and Donald W. McCoshim, assistant secretary and assistant treasurer.

Remick McDowell

Credit picture

(Continued from page 19)

der to arrive at a common denominator on a *percentage* basis. The information requested was kept as simple as possible and covered only those items of maximum interest to credit and collection men. Each company was asked only for that data which it normally records or that could be obtained with a minimum of effort.

Many interesting and informative facts are shown by "The Credit Picture."

The increase in dollars sales is more or less uniform throughout the country. Although some of the increase is attributable to rate increases that were granted to many of the reporting companies, it is a healthy sign for the industry.

The number of customers connected to company lines shows a substantial increase in all sections of the country but particularly in the South and West. As might be expected, the greater dollar sales have resulted in increased outstandings. New England and the South Central areas reported a slightly higher increase than the rest of the country, but only the West South Central area indicated an increase in the outstanding in percentage of sales.

The number of discontinue notices used is on the increase—an undesirable trend that is worthy of further study. It is important that ways and means of collecting money be devised before resorting to the discontinuance of service.

New England and the Mountain States exhibited a decided decrease in the number of notices used; however, one company in each of these areas reported a change in policy that resulted in a reduction of sufficient magnitude to reverse the trend for the area.

The number of meters discontinued for non-payment showed an increase for every section of the country except New England.

Deposit outstanding does not follow the regular pattern of most of the other data. It should be pointed out, however, that the increase in deposit outstanding is possibly due more to the higher amount of the individual deposit because of the increase in sales and rate, than it is to any increase in the number of deposits.

The number of accountants charged off has increased for every section of the country, and can indicate only one thing: Money is not as plentiful as it was a year ago. Again the South and West exhibit a larger increase than the rest of the country.

The net charge off is consistently higher in all sections. It is noted that the New England and Mountain States, which reported the largest decrease in the number of discontinue notices used, also reported the largest increase in the net charge off.

Looking at "The Credit Picture" as a whole, a trend toward increased losses is evident.

Individual companies can increase the usefulness of these data by keeping tables or graphs of the statistics presented for their particular region as well as the country as a whole. In this way, they will get the credit picture and as time goes on will accumulate a set of data that should prove exceedingly valuable as an aid in judging future trends.

In view of the importance of this project, the committee has arranged for semi-annual publication of latest information on "The Credit Picture."

Regions given in "The Credit Picture" are broken down as follows: New England States—Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont; Mid-Atlantic—New Jersey, New York and Pennsylvania; East North Central—Illinois, Indiana, Michigan, Ohio and Wisconsin; West North Central—Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota and South Dakota; South Atlantic—Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia and West Virginia; East South Central—Alabama, Kentucky, Mississippi and Tennessee; West South Central—Arkansas, Louisiana, Oklahoma and Texas; Mountain States—Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah and Wyoming; Pacific States—California, Oregon and Washington.

Management's job

(Continued from page 14)

dread of being without a job grips the imagination and heart of a great majority of individual workers.

This is not a problem which can be solved only through the payment of unemployment compensation by government, which is simply another name for the dole. Numerous organizations already have made substantial strides in eliminating or reducing unemployment to a minimum. Public utilities are in an enviable position in this field because of the comparatively steady production and sales of utility services. In virtually no other industry is employment as steady from year to year. The number of utilities which have capitalized on this natural asset and developed it to a state where it can be used as an employment guarantee, can be counted on the fingers of one hand. Management must explore this field on an unbiased, broad, constructive basis.

(4) Effort must be made by management to find ways and means of meeting the costs incident to human welfare needs of its people through the use of reserves similar to those set up for other programs.

Accountants recognize the importance of putting aside a portion of earnings for depreciation purposes. Many companies have made plans to retire employees as well as machines through a similar process. Few, if any, however, have given any thought to the possibility of accrual of reserves which should be recognized for rate-making and taxing purposes for the purpose of providing other social benefits, health protection, protection against periods of low production, protection against disability because of accident or sickness.

If it is logical to accumulate surplus

to guarantee continuity of dividend payments to the owners of a business, and it seems to be logical, why should it not be just as logical to protect incomes of those people who work to produce the company's income. It certainly cannot be considered paternalistic to propose that benefits to employees, as well as wages, come from the earnings of production of the workers rather than indirectly through government.

These benefits can materialize through careful study based on the assumption that employees can achieve their desires through cooperative efforts to increase production. It is only through production that benefits of any kind can be secured, and I see nothing wrong with the plan of utilizing a part of the proceeds of production to guard against a rainy day, not only for stockholders, but for employees as well.

Secondly, the workers seek recognition. I do not mean recognition as part of a bargaining unit nor recognition of a union. I refer to workers as human beings. The concept of labor or the laborer as another tool or as raw material to be bought at a stipulated price—wages, has no place in the thinking of modern management.

Men want the dignity of being treated as humans, of being part of the team, of knowing and sharing the responsibility of running the business successfully. Men want to be individuals, not numbers. They want to feel they are doing a vital part of the whole operation, that the job each is doing is important.

This problem of creating esprit de corps, of making each man and woman in the organization feel that he is part of the team, is such a simple matter that it hardly needs detailed explanation. No one can play on a team unless he understands the game that is being played, unless he knows his function in each play of the game, unless he knows the rules and the signals and unless he knows the score. Finally, it is elemental that these players, if they are to get the sense that they belong, must get a little applause for their effort.

That is management's duty—to give the members of this team sufficient information so that they may understand the operation of the project on which they are engaged, their part in its execution and the results of the company's operations. Add to this a share in the credit or benefits that accrue to the company because of a job well done by the team and recognition of the contribution of each member, and the problem is solved.

While methods of opening the channels of information from management to employees are well understood and include such vehicles as company magazines, letters, bulletin boards, employee and stockholder reports, special bulletins and employee meetings, there are two factors which tend to impede the functioning of the information-giving process.

The first factor is lack of recognition by management of the importance of the task at hand, and the consequent delegation of the job to some individual who does not understand the problem and lacks the knowledge and/or ability to meet it. Management goes its way, solving the important problems of finance, markets, product improvements, and customer relations, but neglects this vital one.

The second impediment relates to language. Employees like straight-from-the-shoulder facts expressed in straightforward, every day language. That's why they read and like labor publications. Management, however, in releasing information to employees must be sure that stockholders are not displeased, that the language used is in proper legal form, according to counsel, that not too much is said. As a result, employees fail to read or understand communications designed for their information.

Management must meet employees in an atmosphere of cooperation, not antagonism. Employee problems must be viewed from the employee angle, not management's. After all, there is not a natural dividing line or a fence between employees and management or employees and owners.

We who represent management must discard the idea that the worker is something apart and of necessity opposed to management. We must recognize the individual, whether he be a messenger boy, clerk, janitor, lineman, as a human being who was born, lives and will die even as you and I. We must recognize him as an individual with problems—housing, health, love, children, and sickness—the same as we have. We must see in him a man who needs fellowship, recognition, sympathy and understanding and who must have self-respect and wants to be part of the team.

Solution of employee wants is in perfect harmony with the entire theory of the free enterprise system. There are numerous proofs that the worker who knows he is being treated fairly is the most loyal worker, and also the best producer. So, from the standpoint of good management under our present system, these fundamental worker problems must be solved.

Capitalism stands on the threshold of a great opportunity—the opportunity to save for the world the greatest thing that has come out of any economic system—human freedom. But that salvation is not possible unless the management of this system shows a high degree of statesmanship, a statesmanship which recognizes the privileged position business holds in this economy, a statesmanship which recognizes that the rights given to business and industry have been given by the people and are not of necessity the divine rights of kings, but rather are enduring only at the will of the people; that men and women who serve the system of free enterprise also have inherent rights and privileges that must not be abrogated.

A Chinese proverb states, "Better to light one candle than to curse the darkness." It asks in these few words for constructive, objective thinking.

I hope that I have succeeded in lighting at least one candle.

Planning for mains

(Continued from page 18)

costs approximately one-third those resulting from the use of smaller mains.

TABLE III—CHANGE IN ENERGY CAPACITY OF MAINS BY RAISING B.T.U. CONTENT OF GAS

B.t.u.	Percent Increase in Capacity
525	Base 100
550	5
600	14
650	24
700	33
750	43
800	52
850	62
900	71
950	81
1000	90

Explanation—Raising B.t.u. from 525 to 800 increases thermal capacity of mains 52 percent.

Group B Mains have 300 percent capacity of Group A Mains.

Reduction in size of mains cannot be justified by increase of B.t.u. content.

Accounting conference

(Continued from page 23)

"accounting departments should take the lead in controlling costs over the critical period that lies ahead." These departments should take upon themselves the job of analyzing operating practices in relation to cost and submit the results to top management with interpretive comments, he continued. "For a budget to be really useful," Mr. Spacek averred, "it should be estimated on the basis of the practices and conditions which the management approves as being the practices which it wants followed."

Opening the Wednesday morning general accounting meeting, E. T. Colton, New Orleans Public Service, Inc., threw the spotlight on clarification of reports to stockholders, employees and public. Methods of presenting financial facts in form and language readily understood by non-accounting personnel, were stressed.

An up-to-date appraisal of machine applications for general accounting was presented by Harry Jeffs, Queens Borough Gas & Electric Co., Far Rockaway, N. Y. Of special interest were views concerning the future applications of accounting machines which portend a continuing trend toward mechanization.

Wage-Hour interpretation

G. Kibby Munson, Washington, D. C. attorney, clarified the conflicting interpretations of the Wage-Hour Law in an address entitled "Computation for Overtime on Overtime." He traced the administration of the act to date and noted that the Wage-Hour Administrator on March 25 issued a ruling that appears to bring all campaigns for the sale of appliances under the law.

Internal auditing as an effective tool of management was the center of attention during the remainder of this session. Introducing the subject, C. J. Nichols, Consolidated Gas Electric Light & Power Co. of Baltimore, chairman, Internal Auditing Committee, admonished the audience not to underestimate the need for effective internal auditing in the utility industry. "As accountants," he said, "you recognize that, with accelerating trends in mechanization of accounting routines, you have lost some of the opportunity for subjective review and appraisal of the voluminous accounting data that underlies your reportings to management."

Further decentralization of management and further utilization of mechanical devices to assemble accounting results are bound to enhance the value of internal auditing, according to Mr. Nichols. In a separate presentation, he described the internal auditing procedures for payrolls used by the Baltimore company. P. J. Buzanga, Consolidated Edison Co. of New York, Inc., spoke on "Internal Auditing of Fire and Other Insurance Coverage" and J. K. Laurentz, The Brooklyn Union Gas Co., led the discussion which closed the meeting.

The Materials and Supplies Committee sponsored three meetings and a luncheon during the conference under the chairmanship of L. R. Michelsen, The Peoples Gas Light & Coke Co., Chicago. At the first meeting, Tuesday morning, E. F. Rodgers, Equitable Gas Co., Pittsburgh, described the repeat or floating purchase requisition used by the Philadelphia Company and its affiliates. Following the Tuesday luncheon, P. H. Butler, Jr., Washington Gas Light Co., presented a paper reporting the results of a survey of 20 companies which brought out different ways of hauling materials from storerooms and presenting them for review.

A progress report on the program of Standard Packaging of Pipe Fittings was given Wednesday morning by G. B. Herr, The Peoples Natural Gas Co., Pittsburgh. At the same session, O. G. Peterson, New York State Electric & Gas Corp., Ithaca, summarized company practice in the preparation of reports for the use of stores departments. A report of the various systems used by member companies in the codification of materials and supplies by R. I. Highgate, Memphis Light, Gas and Water Division, Memphis, Tenn., was the principal paper presented at the final meeting, Wednesday afternoon.

Plant accounting meetings were held Tuesday afternoon and Wednesday morning under the chairmanship of K. R. Watson, Philadelphia Electric Company and J. A. Ryan, Consolidated Edison Co. of New York, Inc. Methods for accumulating and distributing costs to property record units in connection with electric mass accounts were described during the first session by J. Pryzie, Consolidated Edison Co. of New York, Inc. Accounting for outside plant construction costs for both small and large gas companies was presented by W. G. Pilgrim, The Peoples Gas Light and Coke Co., Chicago, and F. E. Drapalik, Union Electric Co. of Missouri, spoke on "Budget Control of Construction Expenditures."

The second plant accounting session opened with a discussion by H. F. Carey, Long Island Lighting Co., Mineola, N. Y., entitled "Do Your Priced Gas Inventory Records of Inside Plant Equipment Meet Your Internal Requirements?" A feature of this meeting was a discourse by J. B. Jeming, New York consultant, on depreciation and its relation to plant accounting and property records. Members of the E.E.I. Depreciation Accounting Committee took part in this discussion and also held two separate sessions under the leadership of A. H. Kuhn, Pioneer Service and Engineering Co., Chicago. At one of the latter meetings, C. N. Rice, Jr., Northern States Power Co., Minneapolis, reported on depreciation practices in Wisconsin and G. T. Logan, Philadelphia Electric Co., led a round-table forum on "Computed Depreciation Reserves under Various Methods." Methods of estimating utility plant life were reported by P. H. Jeynes, Public Service Electric & Gas Co., Newark, and P. L. Griffith, New York, spoke on the effect of changing price levels.

Further depreciation information was on tap at the taxation accounting meeting Wednesday morning which offered a strong program under the direction of B. S. Rodey, Jr., Consolidated Edison Co. of New York, Inc., and J. R. Weger, Consolidated Gas Electric Light and Power Co. of Baltimore. Prof. Robley Winfrey of Iowa State College, traced the development and application of depreciation rates. Capital versus maintenance trends in the tax field were expounded by Thomas E. Hurns, Detroit Edison Co., and other phases of this subject were outlined by Harold F. Noneman, of Whitman, Ransom, Coulson and Goetz, New York. Leo. A. Diamond, LeBoeuf and Lamb, New York, rounded out the program with an informative talk on "Tax Consequences of Pension Plan Changes."

The Customer Activities Group presented a well-balanced program of two full sessions, Tuesday morning and Wednesday afternoon, and sponsored luncheon meetings of the customer accounting, credit and collections, and customer relations divisions. P. E. Ewen,

Michigan Consolidated Gas Co., Detroit, and R. G. Schneider, Virginia Electric & Power Co., Richmond, were co-chairmen of the group sessions which attracted a capacity audience.

Launching the Tuesday morning session, E. W. Smith, Pennsylvania Power & Light Co., Allentown, called the branch office "the most effective tool for good public relations available to a utility corporation. The branch office holds the pulse of the public in its hands and is the first source to apprehend any sign of increasing dissatisfaction on the part of the patrons." Mr. Smith stressed the importance of well-trained personnel, "good housekeeping" and attractive modernized offices, illustrating the latter point with mounted photographs of recently revamped utility offices.

Advantages of work simplification plans in customer accounting departments were depicted in a provocative talk by H. E. Steiner, Central New York Power Corp., Syracuse. In addition to time savings, a soundly conceived and well-executed program will create better relations within the organization and "promote continual reduction in costs through regular study of method improvements by the supervisory force."

E. H. Martinson, The Washington Water Power Co., Spokane, pointed out the tremendous problem involved in handling service orders which he estimated to average about 30 million annually for the gas and electric utilities. He urged greater simplification through streamlined procedure wherever possible and the setting up of a work process chart for intensive analysis.

A keyhole view of basic collection practices presented by S. C. Grant, Philadelphia Electric Co., brought out a wide variety of current procedure. A step in the direction of intelligent collection work, Mr. Grant declared, is the automatic classification of customers according to their paying habits.

Following the Tuesday morning Customer Activities Group meeting, luncheon meetings were held as follows: *Customer Accounting*—W. J. Ott, The Cincinnati Gas & Electric Co., and A. G. Burnett, New York Power & Light Corp., Albany, co-chairmen; *Credit and Collections*—J. D. Elliott, The Detroit Edison Co., and C. L. Havener, Consolidated Edison Co. of New York, Inc., co-chairmen; and *Customer Relations*—F. J. Porter, Jr., Consolidated Edison Co. of New York, Inc., and B. Morgan Scherer, Citizens Gas & Coke Utility, Indianapolis, co-chairmen. These meetings produced a wealth of information on many practical problems.

A valuable feature of the Customer Accounting luncheon meeting was a comprehensive exhibit of meter reading sheets and bill forms arranged by D. C. Gillespie, United Fuel Gas Co., Charleston, chairman of the project committee. Mr. Gillespie also presented a summary of the outstanding features of these forms and other useful data.

Of unusual interest was a refreshing and illuminating panel discussion entitled "Sacred Cows." Based upon a question and answer survey of the customer accounting practices of 73 companies, the panel promoted vigorous discussion of current operating techniques under the theme "Are you Pasturing Big Producers or Sacred Cows?" Participating in the panel were R. F. McGlone, The East Ohio Gas Co., Cleveland, and F. W. Phelps, Union Electric Co. of Missouri, St. Louis, project co-chairmen, assisted by R. B. McCrorey, Georgia Power Co.; J. T. McKay, New Orleans Public Service Inc., and Harold F. Quad, Public Service Electric & Gas Company.

Discussion leaders at the Credit and Collections luncheon were F. J. Flom, The Detroit Edison Co., and H. S. Hahn, The Ohio Fuel Gas Co., Columbus. Louis Stoecker, Public Service Electric & Gas Co., and C. J. Berner, Wisconsin Electric Power Co., served in a similar capacity at Customer Relations meeting.

The concluding Customer Activities Group session, Wednesday morning, opened with a composite credit picture, reflecting the experience of the gas and electric industries, presented by H. D. Amann, The Brooklyn Union Gas Company. A separate article in this issue of the MONTHLY is based on the material presented at the conference by Mr. Amann.

"Customer relations is everybody's business", W. E. Sturm, West Penn Power Co., Pittsburgh, told the delegates in a stimulating address entitled "Let's Stop Talking." There has been altogether too much talk and too little action, Mr. Sturm said, and too many companies depend on their customer relations philosophies filtering down through supervisory contacts.

Urging management to get out of its ivory towers and go down on the front line to find out what makes customers happy, he advocated the setting up of a conference group consisting of one of each type of contact employee—a meter reader, cashier, lineman, salesman, serviceman, and so on. This plan has resulted in a well-rounded customer relations program in his own company, Mr. Sturm reported.

Mark sensed meter reading was the target of extended discussion at the hands of a panel consisting of George I. Simpson, The Peoples Gas Light & Coke Co., Chicago, who acted as moderator in the absence of A. C. Haake, chairman of the project committee; J. T. Fowler, Jr., Alabama Power Co., Birmingham; J. R. Heery, The United Illuminating Co., New Haven; and George Higgins, The Detroit Edison Company. This discussion resulted in a thorough airing of some of the relevant questions regarding curtailment of underlying records, especially the meter reading sheet, when the marked sense reading method is adopted.

An extensive analysis of customer accounting costs, including production comparisons, presented by M. J. Walsh, Consolidated Edison Co. of New York, Inc., was the concluding feature of the Customer Activities Group meeting. Mr. Walsh summarized the results of a survey of 62 companies showing cost increases between 1944 and 1947. Representatives of those companies having the lowest percentage of increase were called upon by Mr. Walsh to describe operating situations or techniques which led to their favorable cost position.

The conference closed in an atmosphere of high accomplishment and inspiration for further progress. Proceedings of this meeting, which will be published and distributed to those who attended, should prove conclusively the ever-widening horizons and increasing importance of the accounting profession in the utility field.

Progress

● In olden days when heavens glowed
It was a Miracle;
The populace dropped to their knees;
The women grew hysterical.
Today when fire fills the sky
We blame no heavenly imp.
It's just the glare of neon from
An advertising blimp.

S. G. LEBOW in *Printers' Ink*

Demand metering

(Continued from page 9)

is known as the Niroc Demand Recorder. It is brand new and was designed specifically to meet the requirements of the gas industry. Like all new devices, more extensive experience is required before we will know the outcome but it rates high in possibilities. The price is considerably less than that of the P D Printometer.

In order to apply this device to a tin meter, it is necessary to utilize some means of conveying the motion of the index shaft to the exterior of the meter. The customary procedure is to introduce a special stuffing box through the right hand side of the front gallery. By means of sprockets and ladder chain the motion of the index shaft is conveyed to the shaft in the stuffing box.

The meter is delivered to the district with a cap and washer on the stuffing box which seals it. At some subsequent date when the demand study is to start, this cap is removed and a plate bearing a micro-switch is slipped over the stuffing box and retained in place by a nut. A cam is then screwed to the end of the stuffing box shaft so that the micro-switch will make and break for every revolution of the shaft. When the demand study is completed, the plate is removed and the stuffing box is re-capped, after which the meter can be left on the premises indefinitely.

Operation of the Niroc Recorder can be described best by referring to the schematic diagram shown in Figure 7.

Accumulation of impulses from meter—When arm of micro-switch mounted on meter is depressed, it closes electric circuit which then energizes the numbering head solenoid and thereby causes the numbering head to advance one number. The numbering head has a long shaft on which is mounted a cam. This cam contacts a micro-switch which diverts the current from the solenoid to a relay which holds the contact until the cam and micro-switch on the meter are in a position to break the circuit.

Printing the total accumulation every 15 minutes—The timing motor causes a shaft to make one revolution every 15 minutes. On this shaft are two cams, one of which rotates with the speed of the shaft while the other builds up tension by means of an internal spring so that when the cam functions it rotates 360° in a split second. The action of the spring type cam depresses a micro-switch momentarily in closing the electric circuit to the print solenoid. This causes a snap action print by causing the print hammer to force the paper tape and an endless ink ribbon against the numerals on the numbering head.

Movement of the paper—The slower moving of the two cams on the timing motor shaft depresses a micro-switch once every 15 minutes thereby energizing a motor which controls the movement of the paper tape. This motor rotates a shaft at the rate of one revolution per minute. On this shaft are a wafer switch and a cam. The wafer switch has a holding contact which insures a constant supply of current to the motor so that the shaft will make one revolution. The cam on the shaft raises a pawl which causes a ratchet to advance one tooth. This ratchet is on the same shaft as sprocket which advances the paper.

Demand recorder

The Niroc Demand Recorder utilizes motors, solenoids, and micro-switches of standard make, and all wiring is fastened securely through a central terminal block. It is substantially constructed and will take moderately rough handling without adverse effect on its operation. The paper tape used in this instrument has the same size and perforations as 35 mm. film. The hours are marked at every fourth perforation on the outer edge of the tape and each roll is of sufficient length to record three weeks' consumption. The ink ribbon is of the endless type and is caused to move by a pulley and spring belt driven by the same shaft which moves the paper. The numbering head on this device integrates in units of two in deference to fact that most of the testing is being done on five lt. meters.

There is no reason why we should not be able to take demand recordings in installations where pressures or temperatures vary. The sketch in Figure 8 shows a demand recorder actuated by the gear which drives the corrected volume counter on an Emcorector.

Such an attachment was used for more than six months by one company with no adverse effect on the Emcorector. If this idea answers one of our problems it may be that the manufacturers of base pressure and volume indexes can provide a suitable take-off in their instruments for this purpose.

One of the difficulties encountered when using GG9 recorders with tin gas meters is that the recommended mechanical means of transmitting the motion is not foolproof. Figure 10 shows a clever method which has been developed by another company to correct this difficulty.

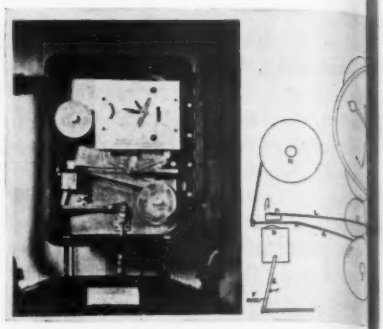


Figure 11. Volco Recorder. Mechanical impulses from meter operate "snap action" type counter

The gas demand meter is made from the regular low-pressure tin case meter. An extra shaft is mounted in the top compartment of the meter, horizontally perpendicular to the register shaft, with a one to one gear ratio. A horse-shoe type magnet is mounted on the far end of this shaft close to the side of the meter case. The tin case is cut away at this point and replaced by a non-magnetic metallic plate. A metal box is fastened to the outside of the meter case at this point. The box contains a shaft which is magnetically coupled to the extra shaft inside the gas meter. The rotation of the inside magnet causes the outside magnet in the box to similarly rotate. This outer shaft operates a contact device which closes an electrical circuit a given number of times for each revolution of the shaft. The contact device is set to register a given number of cubic feet of gas per contact.

The gas demand board is a metal board containing a General Electric Company Type G9 impulse operated demand meter, a low voltage direct current relay and four standard No. 6 dry cells. The demand meter has a circular wax chart on which all contacts are recorded for each thirty minute interval during a sixteen day period. The clock and demand meter coils are energized from a two wire, 115-volt single phase service.

This circuit is protected by a six-ampere fuse mounted on the demand board. The dry cells supply a six-volt direct-current circuit which, when connected to the demand contacts in the gas demand meter, operates the relay on the board. This closes the 115-volt circuit to the coils on the demand meter and in that way records each contact on that meter.

Trends in the economy

(Continued from page 6)

terials and by the growth in the experience of supervisors and of the work force. Furthermore, before managements decide that they cannot afford to adjust prices to the drop in the willingness to spend money, they should consider the consequences of not reducing them.

What long-term trends can be distinguished in the American economy? No one, of course, can pretend to see very completely the economic picture of the future, and yet if the country enjoys peace for the next several decades, several long-term trends seem highly probable. The following six appear to me to be the most probable:

(1) Government expenditures will rise about as fast as production, and possibly faster. Hence the cost of government chargeable against each unit of output will not decline and may rise.

(2) The rate of taxation will not drop and may slowly rise. This is an almost inevitable result of the huge demands being made on the government. If increases in taxes are necessary, they will fall in the main upon corporations and upon persons in the middle income groups—the two large sources of additional revenue which are politically weak.

(3) Output per manhour will rise more rapidly in the future than in the past. In the past, output per manhour has increased about two percent a year, due partly to industrial research and partly to the increase in industrial plant and equipment per worker.

With research expanding more rapidly than in the past and with capital per worker rising faster than in the past, the increase in output per manhour may easily run three percent a year, and possibly 3.5 percent or even more.

(4) Hourly earnings of employees will rise faster in the future than in the past, and probably faster than output per manhour. Hence labor cost per unit of product in the economy as a whole will probably rise over the long run.

(5) The long-run movement of prices is likely to be upward. This is almost inevitable if hourly earnings rise faster than output per manhour.

(6) The share of employees in the national income will continue to rise and the share of property will continue to drop. This will be the result of the rise in capital per worker.

My conclusions assume that the price level will be permitted to adjust itself to increases in costs. If it is not allowed to do this, then these views of long-term trends must be drastically revised.

I concede that sources of investment funds in the future are likely to be quite different from those in the past. Retained earnings will undoubtedly continue to be a major source of corporate funds.

With the labor force growing more slowly in the future than in the past, funds from life insurance companies, retained earnings, and term loans from banks plus some funds obtained directly from the general public will make it possible for capital per worker to grow as rapidly as in the past. There is always the possibility, of course, that companies will succeed in tapping important new sources of funds by bringing out new types of securities, such as preferred stocks which are attractive to investors of moderate means. And if investment-seeking funds should become chronically scarce, there is the possibility that industry will be able to meet the problem by developing capital-saving inventions. The great growth of technology gives industry a far greater capacity to adapt itself to new conditions than it has ever possessed in the past.

Thus, on a long-term basis—

(1) Government expenditures are likely to rise as fast as the output of the economy and possibly faster.

(2) Tax rates are likely to be at least as high as they are now.

(3) Output per manhour is likely to rise faster than in the past.

(4) Hourly earnings are likely to increase faster than output per manhour.

(5) Prices are likely to advance slowly.

(6) The share of employees in the national product is likely to grow.

By far the most important item in this list is the prospect that output per manhour will grow more rapidly in the future than in the past. This is important because the rate at which output per manhour changes determines what happens to the average standard of living in the community. Regardless of the trend of taxes or prices, the standard of living will rise provided output per manhour increases and provided reasonably full employment is maintained. This last proviso is important because a rapid rise in output per manhour may be accompanied by a high level of unemployment, as the experience of the thirties shows. If output per manhour rises rapidly and full employment is maintained, the standard of living will also rise rapidly.

It is easy to be too pessimistic about the long-run prospects of the economy. Most people are unaware of American industry's tremendous capacity for growth, and have difficulty in visualizing the results of growth. The typical behavior of the economy is expansion.

Even if output per capita were to grow no faster than it did during the 40 years between 1889 and 1929, it would be about $3,100 (in terms of present dollars) by 1980. This would mean an annual income of about $9,300 for a family of three. If the growth in the future were to be around three percent a year, per capita income by 1980 (in terms of present dollars) would be about $4,250, or about $12,750 for a family of three. This amount might well be regarded, I think, as a reasonable target for the economy. It is well within the range of practical achievement provided the country is fortunate enough to enjoy peace and provided the people of the country understand that their well-being depends fundamentally upon the productivity of industry and are willing to make the encouragement of productivity a principal objective of public policy.

PICTURE OF CHANGING PATTERN OF DEMAND IN THE UNITED STATES

	1946		*1947*		*1948*		*1949*	
	(billions)						*(1948 prices)*	
		%		%		%		%
Total gross national product	$209.3	100.0	$231.6	100.0	$254.9	100.0	$265.2	100.0
Consumption expenditures	147.4	70.4	164.8	71.1	177.7	69.7	188.3	71.0
Gross private investment	26.5	12.7	30.0	13.0	39.7	15.6	32.9	12.4
Purchases of goods by government	30.8	14.7	28.0	12.1	36.0	14.1	44.0	16.6
Net foreign investment	4.7	2.2	8.9	3.8	1.5	.6	.0	0.0

G.A.M.A. reveals enterprising sales plans

"OPERATIONS ENTERPRISE" was the theme of the fourteenth annual meeting of the Gas Appliance Manufacturers Association held April 5-7 in the Hotel Broadmoor, Colorado Springs, Colorado. Before the last speech and the final divisional discussions were completed, sufficient evidence had been introduced before the 300 producers to indicate that plenty of enterprise is being demonstrated all along the line by gas companies, the American Gas Association, G.A.M.A., manufacturers, distributors, dealers and others, in coping with the major matter of the hour—the rapidly developing "hard selling situation."

Practically every speaker at the three-day session had something pertinent to say about the need for speeding up and intensifying selling, sales training, publicity, advertising and sales promotion to reach the consumer.

The American Gas Association was well represented on the program at the general sessions. What the A. G. A. is doing and contemplates doing to sell gas as a fuel and to help merchandise gas-operated appliances and equipment was reviewed by A. G. A. President Robert W. Hendee, president, Colorado Interstate Gas Co., and Hugh H. Cuthrell, vice-president, The Brooklyn Union Gas Co., and chairman, A. G. A. General Promotional Planning Committee.

Frank J. Nugent, president of G.A.M.A. presided at general sessions and delivered the opening address on "Operations Enterprise." He reviewed G.A.M.A. activities and paid tribute to the spirit of cooperation between A. G. A. and G.A.M.A. as a result of the various cooperative advertising and sales promotion projects in which the two associations are jointly engaged.

Officers elected at G. A. M. A. meeting: (Left to right) H. Leigh Whitelaw, secretary and managing director; Louis Ruthenburg, Evansville, second vice-president; Stanley H. Hobson, Rockford, president; John Van Norden, Scarsdale, N. Y., treasurer; Frederic O. Hess, Philadelphia, first vice-president

Leigh Whitelaw, managing director of G.A.M.A., spoke optimistically about the future. He stated that none of the signs that characterized previous recessions had shown up to date.

Traffic problems of the industry were discussed by Charles C. Warwick, New York, chairman of G.A.M.A.'s traffic committee. George R. Richards, New York, discussed "A Few Legal Points." R. T. Killian, Cleveland, chairman of the G.A.M.A. Marketing Committee, advocated extension to all products produced by association members of the trading area system of collecting appliance statistics.

Spring and fall advertising, publicity and sales promotion plans were disclosed by chairmen of the various divisions and groups of G.A.M.A. Progress reports on the "Court of Flame" gas water heater campaign were made. Latest sales plans for all types of gas ranges, "CP" ranges and other products were presented, along with tie-ins with A. G. A. promotional activities.

Meritorious service award certificates were awarded to a number of G.A.M.A. members for outstanding past services to the association and the industry. The awards have been established on an annual basis and will be presented each year at the annual meeting.

Officers elected, to take office in October, were: President—Stanley H. Hobson, president, George D. Roper Corp., Rockford, Ill.; first vice-president—Frederic O. Hess, president, Selas Corp. of America, Philadelphia; second vice-president, Louis Ruthenburg, president, Servel, Inc., Evansville, Ind.; re-elected treasurer—John Van Norden, secretary, American Meter Co., New York; secretary—H. Leigh Whitelaw.

Associated organization activities

Eck to head Mid-West Gas Association

LESTER J. ECK, vice-president, Minneapolis Gas Co., was elected president of the Mid-West Gas Association at the group's forty-fourth annual meeting, April 11-13, at Des Moines, Iowa. Mr. Eck succeeds Arnold C. Rathkey, gas engineer, Iowa Public Service Co., Waterloo.

Other officers for 1949-50 are: first vice-president—D. J. Reimers, Minnesota Valley Natural Gas Co.; second vice-president—Roy B. Searing, Sioux City Gas & Electric Co.; secretary-treasurer—H. E. Peckham, Northern States Power Company.

New executive council members are: J. C. Clarke, Northern States Power Co.; M. G. Cook, Phillips Petroleum Co.; A. L. McKinstry, Iowa-Illinois Gas & Electric Co., and J. F. Merriam, Northern Natural Gas Co.

Three hundred delegates and guests enjoyed five helpful business sessions and the annual banquet. A banquet highlight was the short address by Charles Smith, only living charter member of the association, who before retirement owned the Yankton (South Dakota) Gas Company.

Convention theme was "sales" with emphasis on meeting increasing competition in a buyer's market. Robert W. Hendee, president, American Gas Association, and H. Leigh Whitelaw, managing director, Gas Appliance Manufacturers Association, stressed the many helps offered nationally in research, advertising and promotion.

Willard F. Rockwell, chairman of the board, Rockwell Mfg. Co., Pittsburgh, called for economy in government to accomplish lower taxes and increased buying power.

A stimulating symposium on dealer cooperation was presented by J. H. Fagan, Jr., Milwaukee, with the following participants: J. H. Brumhall; Boone, Iowa; C. E. Roberts, Storm Lake, Iowa; J. M. Hollingsworth, Rock Island, Ill.; A. M. Schultz, Minneapolis, and S. D. Whiteman, Hastings, Nebraska.

Another practical symposium on service policies, also arranged by Mr. Fagan, presented the views of: W. W. Mullikin, Keokuk, Iowa; W. G. Finke, Mason City, Iowa; J. J. Hutton, Fort Madison, Iowa; G. E. Johnson, Minneapolis; and S. M. Johnson, St. Peter, Minnesota.

Gideon Seymour, executive editor Minneapolis *Star and Tribune*, discussed atomic power, and M. B. Mackay, utility engineer, A. O.

Smith Co., gave details on "180 Degree Water."

National and international problems were discussed by R. A. Phillips, vice-president and general manager, Central Electric & Gas Co., Lincoln, Nebraska. K. J. Forderbruggen, St. Peter, Minn., covered all types of gases in his paper on "Chimney Liners."

E. Carl Sorby, vice-president, Geo. D. Roper Corp., urged immediate house-to-house canvassing in his challenging talk on "Have We Forgotten How To Sell?" B. H. Wittman, manager of domestic sales department, The Peoples Gas Light & Coke Co., Chicago, stressed the need for selling all major appliances against electric competition.

John A. Gilbreath, air conditioning sales manager, Servel, Inc., stressed the value of this summer load and urged its promotion throughout the gas industry. Norval D. Jennings, secretary, A. G. A. New Freedom Gas Kitchen Program, urged greater participation in kitchen-laundry activity as a proven method of increasing gas load in new and old homes.

Impressive program for S. G. A. short course

ENGINEERS from seven states will be instructors at the Fourth Annual Short Course in Gas Technology at Texas A & I College May 30-June 1. Sponsored by the Southern Gas Association, the course brings each year about 200 industrialists and engineers to the A & I campus.

Gas conservation practices and the growing importance of gas technology will be stressed, according to Dr. Frank H. Dotterweich, administrative committee chairman. C. R. Williams, Chicago Corp., Corpus Christi, is chairman of an advisory committee of industrialists.

Two sections of study will be offered, "Latest Methods of Solving Important Problems of Production and Transmission," and "Improved Techniques in the Utilization of Natural Gas."

Appearing on the production and transmission program will be Dr. Joseph Parent, Institute of Gas Technology, Chicago; J. A. Rossitter, The Thermix Corp., Houston; B. T. Mast, Tennessee Gas Transmission Co., Houston; D. T. McDonald, Magnolia Petroleum Co., Dallas; Jack Talbot, Dowell Inc., Alice; Dr. D. A. Shock, University of Texas, Austin; J. Paul Sloan, Gulf Oil Corp., Houston, and Robert M. Hutchinson, Houston Natural Gas Corporation.

In the utilization section are Chester E. Bloom, formerly with Purdue University, Lafayette, Ind.; Walter E. Duncan, Ozark-Mahoning Co., Tulsa; Marvin Smith, Muncie Gear Works, Muncie, Ind.; D. M. Baker, Oklahoma Natural Gas Co., Tulsa; Walter F. Friend, Ebasco Services Inc., N. Y.; H. Charles Pierce, Servel, Inc., Evansville; William Wendt, Texas representative of Ready Power, Beaumont; and L. L. Luxon, American Liquid Gas Corp., Los Angeles.

P. C. G. A. sales and advertising groups meet

THE SALES AND ADVERTISING section of the Pacific Coast Gas Association held two important meetings recently, one a commercial cooking equipment council conference in Los Angeles, and the other industrial sales conference in San Francisco.

R. D. MacMahon, Southern California Gas Co., reviewed the cooperative advertising program of the association with special emphasis on the 1949 program of $70,000 for advertisements in publications of the commercial cooking and baking industries.

Twenty representatives of gas companies and commercial equipment manufacturers participated in discussions relating to their particular phase of the gas industry. The subject of health and sanitation was discussed in the light of local codes, with suggestions that the recommendations of the National Sanitation Foundation be followed as closely as possible with respect to hot water temperatures for dishwashing.

A recommendation was made that gas companies provide an inspection and adjustment service on newly-installed restaurant equipment to insure desired performance and maximum efficiency.

The industrial sales conference was the first held since the war and was attended by 56 representatives from 13 companies. Problems arising during firm gas curtailments were discussed informally. This subject brought up a discussion of stand-by fuels and dual fuel-burning equipment.

Delegates were advised that industrial winter space heating loads should be kept as low as possible for the next few years. Emphasis was also placed on the advantages of having architects and engineers specify stand-by equipment in new establishments.

G. A. M. A. forms new floor furnace group

FORMATION of a Floor Furnace Group has been announced by Harold Massey, assistant managing director, Gas Appliance Manufacturers Association, as the result of increasing interest in gas-operated floor furnaces. First chairman of the new group is Lee A. Brand, vice-president, Empire Stove Company.

The Floor Furnace Group was activated at G. A. M. A.'s 1949 annual meeting and will operate in conjunction with the association's Gas House Heating and Air Conditioning Equipment Division, Frank L. Meyer, president, Meyer Furnace Co., chairman. There are now 18 divisions and groups in G. A. M. A. covering practically all phases of the industry.

Florida—Georgia gas men elect Roberts

JAMES K. ROBERTS, Florida Public Utilities Co., West Palm Beach, has been elected president, Gas Meters Association of Florida-Georgia. In accordance with a custom of long standing, retiring President Clifford J. Noda, St. Augustine Gas Co., St. Augustine, was appointed vice-president of the association.

John W. Owen, Central Florida Gas Corp., Winterhaven, was re-elected secretary-treasurer; Joseph Frink, Florida Power and Light Co., and Robert Gresimer, Jacksonville Gas Corp., were elected to the board of directors replacing Francis Middleton and Harold Duguid whose terms have expired.

New officers of the Florida-Georgia Association were formally installed during the annual banquet in St. Augustine on April 12.

Texas Eastern starts new construction

CONSTRUCTION WORK has begun on Texas Eastern Transmission Corporation's new expansion program, designed to increase the capacity of its natural gas pipeline system to 740 million cubic feet a day.

The company will lay 177.5 miles of 26-inch diameter pipeline looping the two existing "Inch" lines, according to R. H. Hargrove, president. At the same time, 69.5 miles of 20-inch pipeline will be built looping two sections of the Little Big Inch in Texas and Louisiana; and 100 miles of 16-inch line will be laid from the Provident City field in Lavaca County, Texas, to the Baytown, Texas, terminus of the Little Big Inch.

Other additions will bring the total number of compressor stations on Texas Eastern's system to 26 and the total effective horsepower of the system to 272,650. Total cost of the project is estimated at $24,052,000.

New A.G.A. members

Individual members

H. T. Abbott, Southern Counties Gas Co., Ontario, Calif.
E. J. Acton, Gas Consumers Association, Boston, Mass.
Wm. H. Adams, The Manufacturers Light & Heat Co., Pittsburgh, Pa.
Frank V. Aler, Jr., Queens Borough Gas & Electric Co., Far Rockaway, N. Y.
William J. Alexander, Public Service Electric & Gas Co., Newark, N. J.
William J. Allen, The Philadelphia Gas Works Co., Philadelphia, Pa.
H. W. Anderson, Southern Counties Gas Co., Pomona, Calif.
Clarence D. Barr, American Cast Iron Pipe Co., Birmingham, Ala.
S. G. Barrett, Southern California Gas Co., Garvey, Calif.
Edward C. Baumann, Public Service Electric & Gas Co., Newark, N. J.
B. R. Bertrando, Institute of Gas Technology, Chicago, Ill.
Edward M. Beyer, John S. Herold Inc., New York, N. Y.
John A. Bieber, The Ohio Fuel Gas Co., Columbus, Ohio
Bernard B. Bigus, The Brooklyn Union Gas Co., Brooklyn, N. Y.
Chester E. Blome, Stewart-Warner Corp., Indianapolis, Ind.
George Bowersox, Coast Counties Gas & Electric Co., Concord, Calif.
Lloyd W. Bradley, Southern California Gas Co., Glendale, Calif.
E. C. Breene, International Petroleum Co., Ltd., Toronto, Canada
Wm. T. Briggs, John Wood Mfg. Co., Inc., Conshohocken, Pa.
A. J. Brodtmann, New Orleans Public Service Inc., New Orleans, La.
Paul D. Brooks, Ebasco Services, Inc., New York, N. Y.
John R. Brough, Institute of Gas Technology, Chicago, Ill.
Edgar A. Brown, Lone Star Gas Co., Dallas, Texas
Kenneth D. Brown, Southern California Gas Co., Van Nuys, Calif.
Samuel J. Bruno, Arco Welding & Machine Works, Inc., Jersey City, N. J.
Warren T. Bulla, Natural Gas Pipeline Co. of America, Chicago, Ill.
Charles H. Butz, Butz Turpell Utilities, Denver, Colo.
Richard J. Cahill, The Peoples Gas Light & Coke Co., Chicago, Ill.
Robert Calrow, Minneapolis Gas Co., Minneapolis, Minn.
Richard W. Camp, Consolidated Gas Utilities Corp., Oklahoma City, Okla.
Orville S. Carpenter, Texas Eastern Transmission Corp., Shreveport, La.
Warren H. Carr, Texas Eastern Transmission Corp., Shreveport, La.
Raymond A. Cassett, Tidewater Gas Co., Virginia Beach, Va.
Russell L. Chalmers, Central Illinois Electric & Gas Co., Rockford, Ill.
V. C. Chelson, Southern California Gas Co., Van Nuys, Calif.
Lawson E. Coate, Texas Eastern Transmission Corp., Shreveport, La.
D. Keith Coffey, Southern Counties Gas Co., Ventura, Calif.
Daniel E. Collins, The Peoples Gas Light & Coke Co., Chicago, Ill.
James J. Condon, The Peoples Gas Light & Coke Co., Chicago, Ill.
J. E. Connolly, North Carolina Gas Corp., Reidsville, N. C.
Ray E. Cooley, Institute of Gas Technology, Chicago, Ill.
Mills Cox, Texas Eastern Transmission Corp., Shreveport, La.
Willis R. Cox, Texas Eastern Transmission Corp., Shreveport, La.
Balfour D. Crane, Texas Eastern Transmission Corp., Shreveport, La.
M. S. Crossley, Consolidated Gas Utilities Corp., Oklahoma City, Okla.
Elmer A. Curry, Southern Counties Gas Co., Santa Ana, Calif.
James Davis, Rochester Gas & Electric Corp., Rochester, N. Y.
Harold C. Day, American Radiator & Standard Sanitary Co., Pittsburgh, Pa.
A. J. DeCelle, Semet-Solvay Engineering Corp., New York, N. Y.
Peter C. DeHaan, Iowa Power & Light Co., Des Moines, Iowa
W. P. Dick, The Ohio Fuel Gas Co., Columbus, Ohio
Robert L. Diekman, Southern Counties Gas Co., Ventura, Calif.
Ben Dovey, Southern Counties Gas Co., Pomona, Calif.
V. C. Dwork, Gas Consumers Association, Minneapolis, Minn.
T. W. Eastman, Southern California Gas Co., Los Angeles, Calif.
James W. Eckerd, Anthracite Institute, Wilkes-Barre, Pa.
J. B. G. Edghill, Esso Standard Oil (Caribbean) S.A., Kingston, Jamaica
Mark G. Eilers, Rochester Gas & Electric Corp., Rochester, N. Y.
W. M. Elmer, Texas Gas Transmission Corp., Owensboro, Ky.
Carl A. Erickson, Jr., The Peoples Natural Gas Co., Pittsburgh, Pa.
E. O. Erland, Southern California Gas Co., Los Angeles, Calif.
Luke H. Ernst, Caloric Stove Corp., Winston-Salem, N. C.
Leroy J. Fast, Southern Counties Gas Co., Ventura, Calif.
Leland M. Feigel, Servel, Inc., Evansville, Ind.
Kenneth Fellows, Houston Natural Gas Corp., Houston, Texas
Edmund S. Finerty, The Peoples Gas Light & Coke Co., Chicago, Ill.
E. C. Fisher, Odin Stove Mfg. Co., Erie, Pa.
G. E. Fitzgerald, Southern Counties Gas Co., Los Angeles, Calif.
Frank Flagg, Kansas-Nebraska Natural Gas Co., Inc., Chicago, Ill.
Harold K. Folsom, Southern Counties Gas Co., Los Angeles, Calif.
Edward J. Ford, The Brooklyn Union Gas Co., Brooklyn, N. Y.
Andres A. Freites, Esso Standard Oil (Caribbean) S.A., Trujillo, Republica Dominicana
Richard A. Furniss, S. S. Fretz, Jr., Inc., Philadelphia, Pa.
John J. Gagen, Consolidated Edison Co. of N. Y., Inc., New York, N. Y.
Rex A. Garfield, Southern California Gas Co., Los Angeles, Calif.
Bowman S. Garrett, Socony-Vacuum Oil Co., Inc., Brooklyn, N. Y.
Carl T. Geren, Texas Eastern Transmission Corp., Shreveport, La.
Eugene S. Goebel, Motorola, Inc., Chicago, Ill.
C. A. Green, Southern California Gas Co., Los Angeles, Calif.
Carl W. Haase, The Peoples Gas Light & Coke Co., Chicago, Ill.
Milton E. Haase, The Brooklyn Union Gas Co., Brooklyn, N. Y.
Cloid B. Hammers, The Petr-O-Fire Co., Los Angeles, Calif.
Edgar L. Harris, Public Service Electric & Gas Co., W. New York, N. J.
Mark Harrison, The Brooklyn Union Gas Co., Brooklyn, N. Y.
Prof. R. F. Hazelton, North Carolina State College, Raleigh, N. C.
Walter J. Herrman, The Commonwealth & Southern Corp., New York, N. Y.
Emil H. Herzog, Texas Eastern Transmission Corp., Shreveport, La.
Robert I. Highgate, Memphis Light, Gas & Water Div., Memphis, Tenn.
Clyde D. Hinman, Institute of Gas Technology, Chicago, Ill.
H. H. Hogue, Southern Counties Gas Co., Culver City, Calif.
David A. Howard, Republic Natural Gas Co., Dallas, Texas
Hubert G. Howell, Memphis Light, Gas & Water Div., Memphis, Tenn.
R. S. Huffman, Oklahoma Natural Gas Co., Tulsa, Okla.
J. I. Hughes, Gas Consumers Association, Washington, D. C.
Willis E. Hughes, Rochester Gas & Electric Corp., Rochester, N. Y.
W. D. Hustead, Southern Counties Gas Co., Ventura, Calif.
George J. Jacoby, The Philadelphia Gas Works Co., Philadelphia, Pa.
Robert J. Jenkins, Alcorn A & M College, Alcorn, Miss.
L. Richard Johnson, Southern Counties Gas Co., Los Angeles, Calif.
S. E. Johnson, Southern California Gas Co., Los Angeles, Calif.
Anthony B. Joseph, Stanthony Corp., Los Angeles, Calif.
William E. Judd, Stewart-Warner Corp., South Wind Div., Indianapolis, Ind.
J. W. Julian, Southern Counties Gas Co., Venice, Calif.
Morton B. Kammerer, Geo. D. Roper Corp., Washington, D. C.
H. F. Keith, Texas Gas Transmission Corp., Owensboro, Ky.
George E. Kemper, A. O. Smith Corp., Atlanta, Ga.
Graham E. Knox, Southern California Gas Co., Montebello, Calif.
Edgar A. Koenig, Texas Eastern Tranmission Corp., Shreveport, La.
Frank E. Kulman, Consolidated Edison Co. of N. Y., Inc., New York, N. Y.
Don T. Lacey, Central Illinois Public Service Co., Springfield, Ill.
R. H. Lamb, Southern California Gas Co., Los Angeles, Calif.
Burton Larson, Southern Counties Gas Co., Santa Monica, Calif.

Hermann Laudani, Lawrence Gas & Electric Co., Lawrence, Mass.
Everett C. Long, Sanitary Gas Co., Newton, N. C.
Howard E. Lordley, Dept. Public Utilities, Richmond, Va.
D. M. Mackie, The Commonwealth & Southern Corp., New York, N. Y.
Henry S. Maday, Maday Body & Equipment Corp., Buffalo, N. Y.
R. T. Mallinson, Lydon Bros., Inc., Hackensack, N. J.
Marshall L. Martin, Texas Eastern Transmission Corp., Shreveport, La.
William B. Marks, Pacific Gas & Electric Co., Sacramento, Calif.
Charles E. Martin, Lewistown Gas Co., Lewistown, Pa.
W. C. McGee, Jr., Tennessee Gas Transmission Co., Houston, Texas
W. H. McInnis, Ebasco Services Inc., New York, N. Y.
R. A. Mercer, Southern Counties Gas Co., Venice, Calif.
S. M. Michael, Pacific Gas & Electric Co., San Jose, Calif.
H. W. Milner, Stewart-Warner Corp., South Wind Div., Indianapolis, Ind.
John B. Moore, Jr., Owens-Corning Fiberglas Corp., San Francisco, Calif.
Lowell Newmyer, Gas Advisers, Inc., New York, N. Y.
Ralph R. Newquist, Roots-Connersville Blower Corp., Connersville, Ind.
L. G. Nieman, A. O. Smith Corp., Los Angeles, Calif.
H. H. Orr, Jr., Duke Power Co., Greensboro, N. C.
W. E. Otis, Southern California Gas Co., Los Angeles, Calif.
H. H. Outerbridge, Esso Standard Oil (Caribbean) S. A., Hamilton, Bermuda
John C. Pace, Jr., Institute of Gas Technology, Chicago, Ill.
Marc W. Pender, American Stove Co., St. Louis, Mo.
Karl Permann, Shell Development Co., San Francisco, Calif.
V. Marlow Perry, The Brooklyn Union Gas Co., Brooklyn, N. Y.
George Popovici, N.V. Petrogas, Rotterdam, Holland
Leonard E. Popp, Southern Counties Gas Co., Los Angeles, Calif.
Donald A. Potter, Stewart-Warner Corp., South Wind Div., Indianapolis, Ind.
R. A. Pritchard, Jr., Citizens Utilities Co., Bangor, Me.
C. B. Randall, Natural Gas Pipeline Co. of America, Chicago, Ill.
Frederick H. Rathjen, Shell Caribbean Petroleum, Maracaibo, Venezeula
Wilmer D. Relyea, Public Service Electric & Gas Co., Newark, N. J.
William A. Riggs, Gulf Mobile & Ohio Railroad Co., Mobile, Ala.
Wm. A. Robertson, The Laclede Gas Light Co., Cincinnati, Ohio
J. B. Robertson, Australian Gas Light Co., Sydney, Australia
H. M. Rogers, Texas Eastern Transmission Corp., Shereveport, La.
John J. Rose, Bryant Heating & Equipment Co., Inc., Atlanta, Ga.
John C. Rosebrook, Honolulu Gas Co., Ltd., Honolulu, T. H.
A. J. Rudnitzki, Institute of Gas Technology, Chicago, Ill.
W. P. Rynders, Southern California Gas Co., Van Nuys, Calif.
Ivan K. M. Scheepers, Natl. Development Foundation of South Africa, Johannesburg, S. A.
J. T. Schilling, Iowa Power & Light Co., Des Moines, Iowa
R. W. Schmidt, Southern Counties Gas Co., Sierra Madre, Calif.
Charles M. Scott, Southern California Gas Co., Los Angeles, Calif.
L. W. Selmeier, The Estate Stove Co., Hamilton, Ohio
W. F. Sheldon, Pacific Gas & Light Co., San Francisco, Calif.
James J. Shepard, Southern Counties Gas Co., Los Angeles, Calif.
Fred J. Silas, The Brooklyn Union Gas Co., Brooklyn, N. Y.
Burton P. Smith, Texas Eastern Transmission Corp., Shreveport, La.
S. G. Somerville, Southern California Gas Co., Van Nuys, Calif.
Robert D. Spurgeon, Southern Counties Gas Co., Santa Maria, Calif.
Chandler Stanley, Southern California Gas Co., Los Angeles, Calif.
Henry C. Stebbins, The Brooklyn Union Gas Co., Brooklyn, N. Y.
Fred Steffens, Kansas-Nebraska Natural Gas Co., Inc., Phillipsburg, Kan.
Mrs. D. S. Striebich, Southern Counties Gas Co., Santa Monica, Calif.
Herbert W. Stuart, U. S. Pipe & Foundry Co., Burlington, N. J.
Freneau B. Surguine, Jr., Vapo-Gas Co., Cocoa, Fla.
Henry N. Toler, Southern Natural Gas Co., Jackson, Miss.
Gopal Tripathi, University of Michigan, Ann Arbor, Mich.
Sidney E. Trouard, New Orleans Public Service Inc., New Orleans, La.
C. Edward Turner, Phillips Petroleum Co., Bartlesville, Okla.
Wm. T. Turner, Jr., Institute of Gas Technology, Chicago, Ill.
Bernard E. Twigg, Citizens Gas & Coke Utility, Indianapolis, Ind.
A. W. Von Hartz, Esso Standard Oil (Caribbean) S. A., Port-au-Prince, Haiti
Neander W. Wade, Memphis Light, Gas & Water Div., Memphis, Tenn.
John S. Wallis, Petro-Chem Dev. Co., Inc., New York, N. Y.
Joseph E. Walsh, Metropolitan Utilities District, Omaha, Neb.
Harry M. Wassum, Texas Eastern Transmission Corp., Shreveport, La.
Paul L. R. White, Southern Counties Gas Co., Glendora, Calif.
Mrs. Eleanor V. Wiese, Public Service Electric & Gas Co., Newark, N. J.
Mary I. Williams, A. O. Smith Corp., Milwaukee, Wisc.
H. R. Withington, Honolulu Gas Co., Ltd., Honolulu, T. H.
Ivan L. Wissmiller, Chicago Bridge & Iron Co., Chicago, Ill.
Howard B. Young, The Connecticut Coke Co., New Haven, Conn.
Kenneth Young, Metropolitan Utilities District, Omaha, Neb.

CONVENTION CALENDAR

1949

MAY

4-6 •Missouri Association of Public Utilities, annual convention, Hotel Muehlenbach, Kansas City, Mo.

9-10 •A. G. A. Natural Gas Department Spring Meeting, French Lick Springs Hotel, French Lick, Ind.

9-13 •A. G. A. Industrial Gas School, Hotel Severin, Indianapolis, Ind.

17-19 •Pennsylvania Gas Association, annual convention, Galen Hall, Wernersville, Pa.

23-25 •A. G. A. Production and Chemical Conference, Hotel New Yorker, New York, N. Y.

24-27 •National Restaurant Exposition, Atlantic City, N. J. (A. G. A. will have combined exhibit)

26-27 •A. G. A.-P. C. G. A. Domestic Research and Utilization Conference, Ambassador Hotel, Los Angeles, Calif.

26-27 •The Natural Gas & Petroleum Association of Canada, annual meeting, Hotel London, London, Ontario

JUNE

May 30-June 1 •Fourth Annual Short Course in Gas Technology, sponsored by Southern Gas Association, Texas College of Arts and Industries, Kingsville, Texas

13-14 •The Institution of Gas Engineers, London, England

15-17 •Fourth International Gas Conference, London, England

16-20 •Canadian Gas Association, annual convention, Bigwin Inn, Lake of Bays, Ontario

20-21 •A. G. A. N. Y.-N. J. Regional Gas Sales Conference, Essex & Sussex Hotel, Spring Lake, N. J.

21-26 •Association Technique de L'Industrie du Gaz en France, Lyon

24-25 •Michigan Gas Association, annual convention, Grand Hotel, Mackinac Island, Mich.

JULY

June 27-July 1 •American Society for Testing Materials, annual meeting, Hotel Chalfonte-Haddon Hall, Atlantic City, N. J.

June 28-July 1 •American Home Economics Association, San Francisco, Calif. (A. G. A. will exhibit)

SEPTEMBER

9 •New Jersey Gas Association, Monmouth Hotel, Spring Lake, N. J.

16-17 •The Maryland Utilities Association, fall conference, Cavalier Hotel, Virginia Beach, Va.

OCTOBER

13-14 •Texas Mid-Continent Oil & Gas Association, annual meeting, Rice Hotel, Houston, Texas

17-20 •A. G. A. Annual Convention, Chicago, Ill.

Personnel service

SERVICES OFFERED

Sales Manager—Graduate engineer, **over 20 years** in sales promotion of house heating and commercial gas appliances. Included servicing as well as selling for appliance manufacturers and utilities. **1606.**

Sales Representative—7 years experience selling and specifying major gas appliances wholesale and retail gas heat, water heat, etc. Sold Utility companies and trade. Vicinity New York City. Married. References available **1607.**

Would be interested in an interview with **manufacturer** to **represent** them in the metropolitan area of New York, on house heating, industrial or domestic. **1608.**

Manager-Engineer—Extensive training and experience in all phases of manufactured gas operations—management, production, distribution, service, sales, rates, labor relations, etc. Also experience in natural gas and propane-air gas. **1609.**

Manager-Engineer—Extensive training and experience in management and operation of Natural Gas Properties. Experience includes high and low pressure distribution design, sales and commercial activities. **1610.**

Mechanical Engineer—Young veteran, recent graduate. No experience in engineering field. Looking for position with future in power or refrigeration and air conditioning fields. Prefer New York area, but willing to travel anywhere in U. S. after June. **1611.**

Engineer—Desiring pipe line work—general construction work. Graduating (Civil Engineer) from Yale, June 1949; five summers in municipal pipe work. **1612.**

Executive Engineer with Mechanical Engineering degree and professional engineering license. 12 years' experience consisting of research and testing work at the A.G.A. Laboratories, consulting work and the design, development and production of gas heating equipment. Experience also includes the advertising, promotion and sale of gas heating equipment. **1613.**

Assistant to President of manufacturing company was formerly successful **industrial** gas **engineer** and **sales** supervisor. Has pined for his "first love" ever since the "divorce" and wishes to return to position in or related to gas industry which will permit him to maintain present rate of income. **1614.**

Junior Chemist—B.S. in Chemistry, College of the City of New York, 1949. Conscientious, ambitious veteran, single. Majored in Organic Chemistry; Organic Analysis. Also have one year of Biochemistry. Prefer New York Metropolitan Area, but will accept out-of-town position. (25). **1615.**

Public Utility **Accountant** and **Auditor**—Now available for any phase of utility operating or holding company accounting—property, customer, general. Methods and systems work, studies on depreciation, maintenance, original cost, financing, etc. Administrative ability; willing to travel; twenty-five years experience principally with utilities; salary requirements moderate. (45). **1616.**

Superintendent with water, coal and propane gas manufacture, and distribution experience. Graduate engineer, Professional Engineer license; Single, Veteran. **1617.**

Chemist, B.S., 1949. Had qualitative organic analysis and instrumental analysis. Good background in mathematics. Prefer position within commuting distance of N. Y. C. **1618.**

Chemical Engineer—Will graduate Syracuse in June. Desires position in technical sales field; course includes chemical processes, operations, instrumentation and design. Prefers East Coast; willing to travel anywhere. Veteran. (23). **1619.**

POSITIONS OPEN

Wisconsin Utility—planning changeover to Natural Gas—seeks experienced **Gas Engineer** for distribution system design, load forecasting and associated subjects. Permanent position and good opportunity. Give age, education and experience. **0551.**

One **Manager** and one **Salesman** for gas properties Vermont conversion to propane-air. **0552.**

Salesmen—for Midwest States and Pacific Coast territories. Excellent opportunity for men familiar with distribution phases of gas industry to sell to gas companies, control manufacturers and petroleum industry. Product is well known and well advertised. Old established company. Salary, commission and expenses. Write complete details of background and experience. **0553.**

Service and **Personnel Superintendent**—To make headquarters in New York for national organization and spend half time traveling on supervisory work. Must be under 40 and have good gas appliance service experience. State present salary, starting pay expected, education and former employment. **0554.**

Merchandiser—Large Eastern gas utility seeking experienced man for promotional work in **Sales Department.** Must be trained in contacting dealers and distributors and have ability to train retail sales force. **0555.**

Engineer—experienced in gas distribution operations and appliance servicing; excellent opportunity in active, growing organization for young man capable of planning and supervising large scale operations; must be free to travel. Applications should give experience, education, age, and salary expected. **0556.**

Assistant Director—in the Home Service Department of a large eastern gas utility. Applicants should hold a B.S. degree in home economics and be experienced in work of a supervisory nature in a similar field. **0557.**

Mid-West program

(Continued from page 27)

suggested that gas utility salesmen, in selling appliances and other services, stress to prospects, what these appliances will mean in adding comfort and security in the home.

I. S. Anoff, president, Albert Pick Co., Chicago, spoke of the close cooperation needed between gas utilities and food service equipment dealers to retain the dominance of gas in the commercial cooking field. He advocated closer dealer relations programs on the part of the utilities, especially in companies where no commercial cooking section is maintained.

Carefully planned advertising and sales promotion programs are absolutely necessary in the sales of gas and gas appliances, Carl V. Haecker, Butler Brothers, Chicago, told the conference. But advertising window display and point of sale promotional effort can be largely wasted, if the salesman has not been educated to know his product and believe in it thoroughly.

Harold E. Jalass, vice-president, Cribben & Sexton Co., left no doubt in the mind of his audience as to his belief in the "clean, blue gas flame" as the ideal fuel. He pointed out the many advantages that gas and modern gas appliances have over all competitive fuels.

The automatic gas laundry dryer, one of the newer members of the gas appliance family, was ably presented and demonstrated by Eleanor M. Morrison and Harriette Lundberg, Michigan Consolidated Gas Co., and Mary N. Hall, Elizabethtown Consolidated Gas Co., Elizabeth, New Jersey. The remarkable progress being made by the LP-gas industry in solidifying the position of gas in areas not reached by utility gas mains was described by Howard D. White, executive vice-president, Liquefied Petroleum Gas Association.

Past and present officers presiding at the various sessions of the conference included William L. Hayes, Ray L. Vandagriff, The Laclede Gas Light Co., B. H. Wittmann, The Peoples Gas Light & Coke Co., and J. E. Walsh, Metropolitan Utilities, District of Omaha. Howard D. Valentine, The Peoples Gas Light and Coke Co., was coordinator of the conference.

At a meeting of the council on March 29, Mr. Vandagriff was elected chairman of the Mid-West Regional Gas Sales Council for the coming year, and Mr. Walsh was elected assistant chairman.

◄ Advisory Council ►

ERNEST R. ACKER....Poughkeepsie, N. Y.
FRANK H. ADAMS.....Toledo, Ohio
EVERETT J. BOOTHBY...Washington, D. C.
FLOYD C. BROWN.....Chicago, Ill.
JAMES A. BROWN.....Jackson, Mich.
W. M. CHAMBERLAIN.Grand Rapids, Mich.
ARTHUR C. CHERRY.....Cincinnati, Ohio
LYMAN L. DYER.....Dallas, Texas
LESTER J. ECK.....Minneapolis, Minn.
E. F. EMBREE.....New Haven, Conn.
KARL EMMERLING.....Cleveland, Ohio
RALPH L. FLETCHER.....Providence, R. I.
C. S. GOLDSMITH.....Brooklyn, N. Y.
H. E. HANDLEY.....Jackson, Mich.
R. H. HARGROVE.....Shreveport, La.
LYLE C. HARVEY.....Cleveland, Ohio
L. E. KNOWLTON.....Providence, R. I.
H. N. MALLON.....Cleveland, Ohio
NORTON McKEAN.....Albany, N. Y.
R. L. O'BRIEN.....Detroit, Mich.
D. P. O'KEEFE.....Los Angeles, Calif.
LEON OURUSOFF.....Washington, D. C.
C. E. PAIGE.....Brooklyn, N. Y.
J. J. QUINN.....Boston, Mass.
J FRENCH ROBINSON....Cleveland, Ohio
W. F. ROCKWELL.....Pittsburgh, Pa.
HERMAN RUSSELL.....Rochester, N. Y.
LOUIS RUTHENBURG.....Evansville, Ind.
D. B. STOKES.....Burlington, N. J.
T. J. STRICKLER.....Kansas City, Mo.
HARRY A. SUTTON.....Newark, N. J.
CHARLES A. TATTERSALL...Syracuse, N. Y.
J. H. WARDEN.....New York, N. Y.
L. V. WATKINS.....New York, N. Y.
JOHN A. WILLIAMS.....Syracuse, N. Y.

◄ Associated Organizations ►

GAS APPLIANCE MANUFACTURERS ASSOCIATION

Pres.—Frank J. Nugent, Bryant Heater Co., Cleveland, Ohio.
Man. Dir.—H. Leigh Whitelaw, 60 East 42nd St., New York, N. Y.

CANADIAN GAS ASSOCIATION

Pres.—Alexander MacKenzie, General Steel Wares, Ltd., Toronto, Ontario.
Exec. Sec.-Tr.—George W. Allen, 7 Astley Ave., Toronto.

FLORIDA-GEORGIA GAS ASSOCIATION

Pres.—James K. Roberts, Florida Public Utilities Co., West Palm Beach, Fla.
Sec.-Tr.—J. W. Owen, Central Florida Gas Corp., Winter Haven, Fla.

ILLINOIS PUBLIC UTILITIES ASSOCIATION

Pres.—C. W. Organ, Central Illinois Light Co., Springfield, Ill.
Sec.-Tr.—T. A. Schlink, Central Illinois Light Co., Springfield, Ill.

INDIANA GAS ASSOCIATION

Pres.—Louis B. Schiesz, Indiana Gas & Water Co., Inc., Indianapolis, Ind.
Sec.-Tr.—Clarence W. Goris, Northern Indiana Public Service Co., Gary, Ind.

MARYLAND UTILITIES ASSOCIATION

Pres.—Adrian Hughes, Baltimore Transit Co., Baltimore, Md.
Sec.—Raymond C. Brehaut, Washington Gas Light Co., Washington, D. C.

MICHIGAN GAS ASSOCIATION

Pres.—T. W. Weigele, Michigan Consolidated Gas Co., Detroit, Mich.
Sec.-Tr.—A. G. Schroeder, Michigan Consolidated Gas Co., Grand Rapids, Mich.

MID-SOUTHEASTERN GAS ASSOCIATION

Pres.—E. P. Game, Roanoke Gas Co., Roanoke, Va.
Sec.-Tr.—Edward W. Ruggles, North Carolina State College, Raleigh, N. C.

MID-WEST GAS ASSOCIATION

Pres.—Lester J. Eck, Minneapolis Gas Co., Minneapolis, Minn.
Sec.-Tr.—Harold E. Peckham, Northern States Power Co., St. Paul, Minn.

MISSOURI ASSOCIATION OF PUBLIC UTILITIES

Pres.—J. W. McAfee, St. Louis, Mo.
Gen. Counsel—Wm. H. Allen, 101 W. High Street, Jefferson City, Mo.

NATURAL GAS AND PETROLEUM ASSOCIATION OF CANADA

Pres.—S. A. Morse, Union Gas Co. of Canada, Ltd., Chatham, Ont.
Sec.—Joseph McKee, United Gas and Fuel Co. of Hamilton, Ltd., Hamilton, Ont.

NEW ENGLAND GAS ASSOCIATION

Pres.—Earl H. Eacker, Boston Consolidated Gas Co., Boston, Mass.
Exec.-Sec.—Clark Belden, 41 Mt. Vernon St., Boston, Mass.

NEW JERSEY GAS ASSOCIATION

Pres.—Howard H. Melvin, Cumberland Gas Co., Millville, N. J.
Sec.-Tr.—Elmer A. Smith, Public Service Electric and Gas Co., Newark, N. J.

OKLAHOMA UTILITIES ASSOCIATION

Pres.—Malcolm Morrisson, Oklahoma Gas and Electric Co., Oklahoma City, Okla.
Sec.—Kate A. Niblack, 625 Biltmore Hotel, Oklahoma City, Okla.

PACIFIC COAST GAS ASSOCIATION

Pres.—A. F. Bridge, Southern Counties Gas Co., Los Angeles, Calif.
Man. Dir—Clifford Johnstone, 447 Sutter St., San Francisco, Calif.

PENNSYLVANIA GAS ASSOCIATION

Pres.—B. V. Pfeiffer, The United Gas Improvement Co., Philadelphia, Pa.
Sec.—William Naile, Lebanon Valley Gas Co., Lebanon, Pa.

PENNSYLVANIA NATURAL GAS MEN'S ASSOCIATION

Pres.—Dorr P. Hartson, Equitable Gas Co., Pittsburgh, Pa.
Exec. Sec.—Mark Shields, 2619 Grant Bldg., Pittsburgh, Pa.

SOUTHERN GAS ASSOCIATION

Pres.—L. L. Baxter, Arkansas Western Gas Co., Fayetteville, Ark.
Man. Dir.—Robert R. Suttle, 1922 M & W Tower, Dallas 1, Texas.

WISCONSIN UTILITIES ASSOCIATION

Pres.—W. E. Schubert, Wisconsin Michigan Power Co., Appleton, Wisc.
Exec.-Sec.—A. F. Herwig, 135 West Wells St., Milwaukee, Wisc.

American Gas Association

HEADQUARTERS, 420 LEXINGTON AVE., NEW YORK 17, N. Y.

A. G. A. TESTING LABORATORIES • 1032 East 62nd Street, Cleveland 3, Ohio • 1425 Grande Vista Avenue, Los Angeles, Calif.

◄ Officers ►

President ..... ROBERT W. HENDEE ..... Colorado Spring, Colo.
First Vice-President ..... HUGH H. CUTHRELL ..... Brooklyn, N. Y.
Second Vice-President ..... D. A. HULCY ..... Dallas, Texas
Treasurer ..... EDWARD F. BARRETT ..... Mineola, N. Y.
Assistant Treasurer ..... V. T. MILES ..... Mineola, N. Y.
Managing Director ..... H. CARL WOLF ..... New York, N. Y.
Secretary ..... KURWIN R. BOYES ..... New York, N. Y.

◄ Department Chairmen ►

Manufactured Gas Department ..... HUGH H. CUTHRELL ..... Brooklyn, N. Y.
Natural Gas Department ..... D. A. HULCY ..... Dallas, Texas

◄ Section Vice-Presidents and Chairmen ►

Accounting Section ..... L. E. REYNOLDS ..... Hartford, Conn.
Residential Gas Section ..... W. M. JACOBS ..... Los Angeles, Calif.
Industrial & Commercial Gas Section ..... B. T. FRANCK ..... Milwaukee, Wis.
Manufacturers' Section ..... WILLIAM F. McCONNOR ..... Pittsburgh, Pa.
Publicity & Advertising Committee ..... R. G. BARNETT ..... Portland, Ore.
Technical Section ..... W. R. FRASER ..... Detroit, Mich.
Testing Laboratories ..... ARTHUR F. BRIDGE ..... Los Angeles, Calif.

◄ Directors ►

F. M. BANKS ..... Los Angeles, Calif.
WALTER C. BECKJORD ..... Cincinnati, Ohio
A. M. BEEBEE ..... Rochester, N. Y.
N. B. BERTOLETTE ..... Hartford, Conn.
EDWARD G. BOYER ..... Philadelphia, Pa.
H. R. COOK, JR. ..... Baltimore, Md.
E. H. EACKER ..... Boston, Mass.
HENRY FINK ..... Detroit, Mich.
J. N. GREENE ..... Birmingham, Ala.
OLIVER S. HAGERMAN ..... Charleston, W. Va.
JOHN L. HALEY ..... Syracuse, N. Y.
D. P. HARTSON ..... Pittsburgh, Pa.
F. A. LYDECKER ..... Newark, N. J.
GEORGE F. MITCHELL ..... Chicago, Ill.
JAMES S. MOULTON ..... San Francisco, Calif.
E. P. NOPPEL ..... New York, N. Y.
ROBERT W. OTTO ..... St. Louis, Mo.
JOHN C. PARKER ..... New York, N. Y.
HUDSON W. REED ..... Philadelphia, Pa.
ARTHUR B. RITZENTHALER ..... Mansfield, Ohio
JOHN A. ROBERTSHAW ..... Greensburg, Pa.
W. H. RUDOLPH ..... Newark, N. J.
LOUIS B. SCHIESZ ..... Indianapolis, Ind.
FRANK C. SMITH ..... Houston, Texas
A. H. STACK ..... Tampa, Fla.
ALLYN C. TAYLOR ..... Reading, Pa.
E. J. TUCKER ..... Toronto, Ont.
JOHN VAN NORDEN ..... New York, N. Y.
HARRY K. WRENCH ..... Minneapolis, Minn.
C. H. ZACHRY ..... Dallas, Texas

◄ Association Staff ►

Managing Director ..... H. CARL WOLF
Assistant Managing Director ..... JOHN W. WEST, JR.
Assistant Managing Director and Director, Natural Gas Dept. ..... GEORGE H. SMITH
Secretary and Convention Manager ..... KURWIN R. BOYES
Secretary, Manufactured Gas Dept. and Technical Section ..... A. GORDON KING
Controller ..... O. W. BREWER
Director, Bureau of Statistics ..... OTTO E. ZWANZIG
Secretary, Accounting Section ..... THOMAS J. SHANLEY
Secretary, Industrial and Commercial Gas Section ..... MAHLON A. COMBS
Secretary, Residential Gas Section ..... F. W. WILLIAMS
Home Service Counsellor ..... JESSIE McQUEEN
Coordinator, Promotion ..... H. VINTON POTTER
Secretary, New Freedom Gas Kitchen Program ..... NORVAL D. JENNINGS
Director, Advertising ..... CHARLES W. PERSON
Director, Publicity ..... GEORGE A. McDONALD
Director, Testing Laboratories (Cleveland, Ohio) ..... EDWIN L. HALL
Supervisor, Pacific Coast Branch Laboratories (Los Angeles, Calif.) ..... W. H. VOGAN
Coordinator, Utilization Research ..... EUGENE D. MILENER
Consultant, Research ..... DR. N. K. CHANEY
Coordinator, Gas Production Research ..... THOMAS LEE ROBEY
Utilization Engineer ..... C. GEORGE SEGELER
Manager, Publications ..... JAMES M. BEALL
Editor, A. G. A. MONTHLY ..... JAC A. CUSHMAN
Secretary, Information ..... FRANCES GIBBONS

PRINTED IN U. S. A.